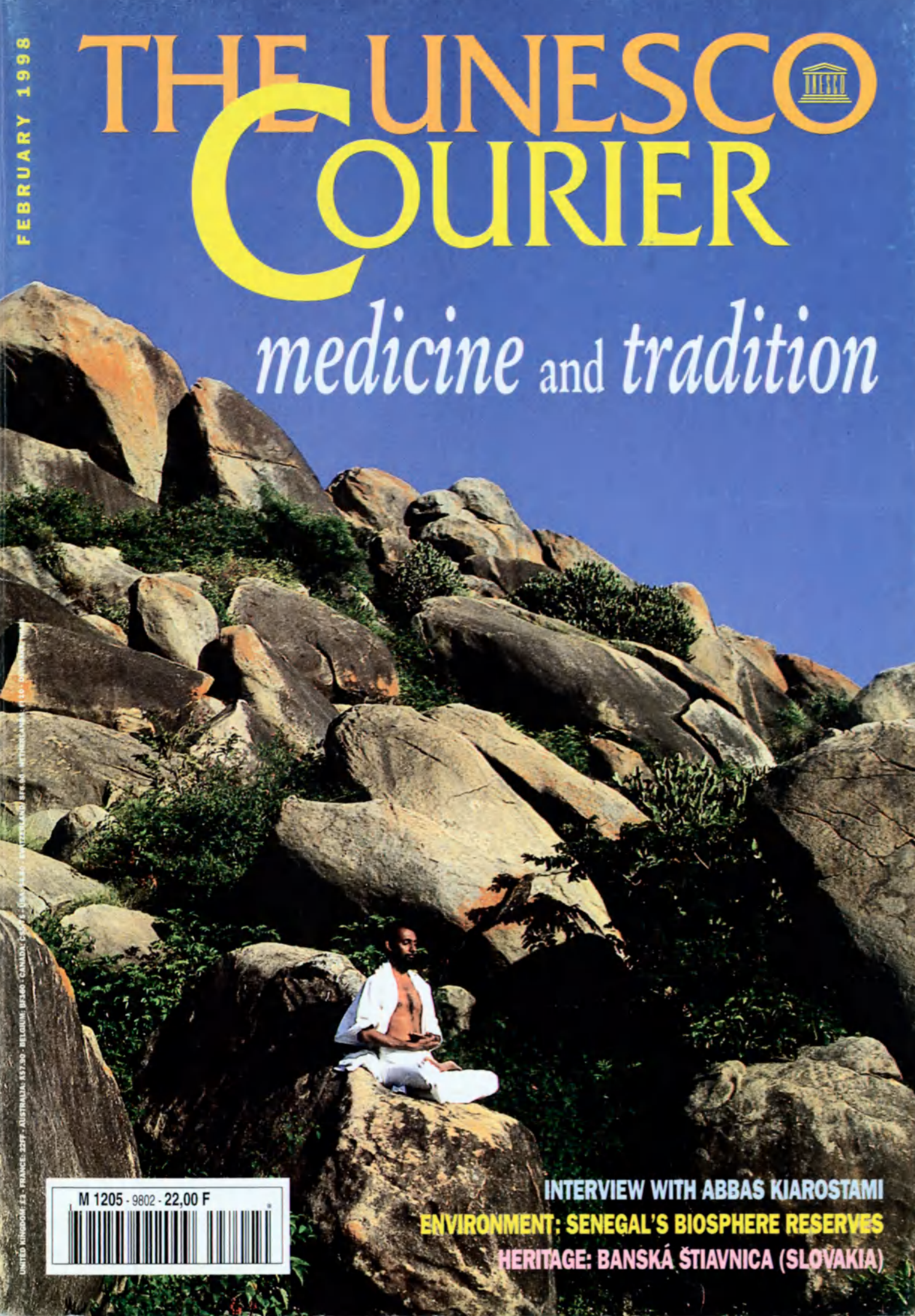
FEBRUARY 1998

THE UNESCO COURIER

medicine and *tradition*



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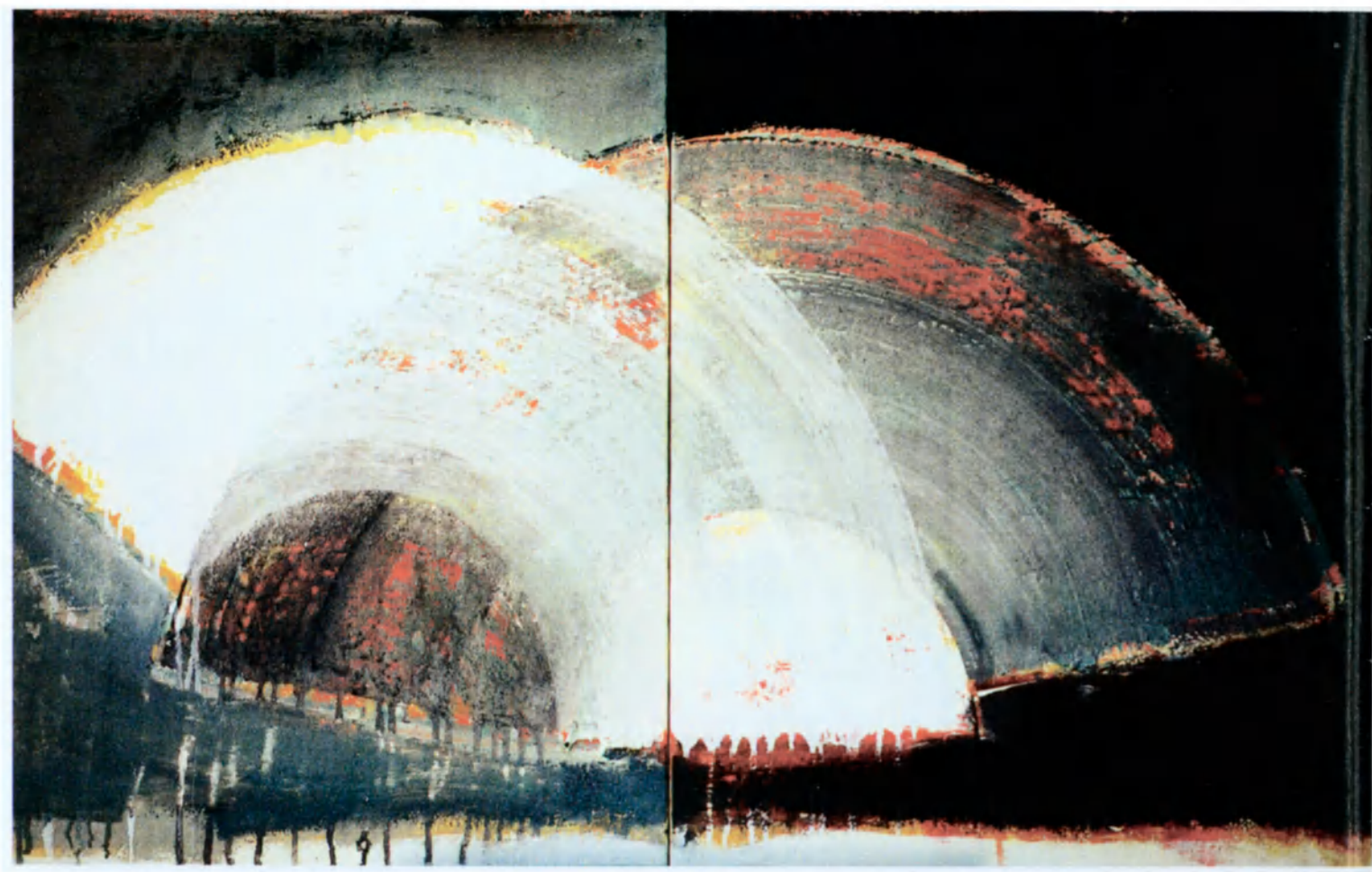
INTERVIEW WITH ABBAS KIAROSTAMI

ENVIRONMENT: SENEGAL'S BIOSPHERE RESERVES

HERITAGE: BANSKÁ ŠTIAVNICA (SLOVAKIA)

ENCOUNTERS

We invite readers to send us photographs to be considered for publication in this feature. Your photo should show a painting, a sculpture, piece of architecture or any other subject which seems to be an example of cultural cross-fertilization. Alternatively, you could send us pictures of two works from different cultural backgrounds in which you see some striking connection or resemblance. Please add a short caption to all photographs.



DIPTYCH WITH TRANSPARENCIES

1996, acrylic on canvas (height 73 cm, width 1.20 m)
by Jean-André Martin

Much of this artist's output consists of assemblages of several canvases. In each part of the diptych shown here, he notes that "the overlapping colours create impressions of transparency in a work aspiring to symbolize the enrichment that accrues from encounters of all kinds."

© Jean Andre Martin Bordeaux

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Abbas Kiarostami

For the Iranian film director who won the Golden Palm at the 1997 Cannes Film Festival, life and cinema are intertwined.

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A meditating
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This issue comprises 52 pages and a 4-page insert between pages 2-3 and 50-51

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A traditional Chinese pharmacy portrayed in a mural painting from the Golden Bell temple at Wutaishan, in Shanxi province.

month by month

by Bahgat Elnadi and Adel Rifaat

Does medicine treat patients or combat illness? Are patients completely autonomous individuals or do they form part of a natural, social and cosmic environment? Is illness caused simply by the intrusion into the body of an outside agent—a virus or a demon?—or is it the sign of an imbalance, a disrupted harmony which the body tries to rectify, where necessary with medical assistance? What role should be played in treatment by knowledge that can be acquired, codified and taught, as opposed to hands-on experience arising from direct contact between practitioner and patient?

These are some of the many questions raised in the present issue. Our contributors, who come from different cultural backgrounds, do not claim to offer hard and fast answers. Instead they put these issues in the different—sometimes very different—perspectives of their respective traditions and doctrines, composing a panoramic picture of medical practice in which knowledge and faith, the culture of the community and personal contact, can sometimes go hand in hand.

Until recently, the approach of modern Western medicine has been radically different from that of all other cultures. The Western art of healing is based on a body of scientific knowledge which views the human body's organs, functions and ailments as phenomena governed by physical, physiological and genetic laws and therefore independent of cultural and local contexts. In the Western tradition treatment means using knowledge of these laws, often backed by sophisticated techniques, to neutralize ailments. Things are starting to change, however, and it is increasingly recognized that other forms of medicine have something to offer or at least that certain questions must be asked.

Nobody would dream of denying the beneficial effects—in some cases immense—of modern medicine. But the excesses to which it can and sometimes does lead are equally plain to see. Is there not a risk of dehumanization inherent in mobilizing a battery of technical resources on patients while disregarding their mental outlook, their culture, their psychological, moral and spiritual resources, their dignity and willpower, their emotional environment and their attitudes to life and death?

Perhaps so-called traditional forms of medicine still have much to teach us. . . . ■

Culture and health

BY CLAUDINE BRELET-RUEFF

Modern medicine may be coming round to the idea that the sick are not 'machines' but people rooted in their cultural and natural environment

Medicine, perhaps more than any other of the activities that contribute to our survival, depends on the cultural context in which it is practised, dealing as it does with birth, suffering and death, those essential features of our human condition. People have been receiving medical attention since long before biology and chemistry came into being, long before the advent of Western-style preventive medicine. Highly efficient therapies—some of them, such as the trepanation and dental surgery performed by the Incas, involving the use of amazing techniques—have been employed for thousands of years.

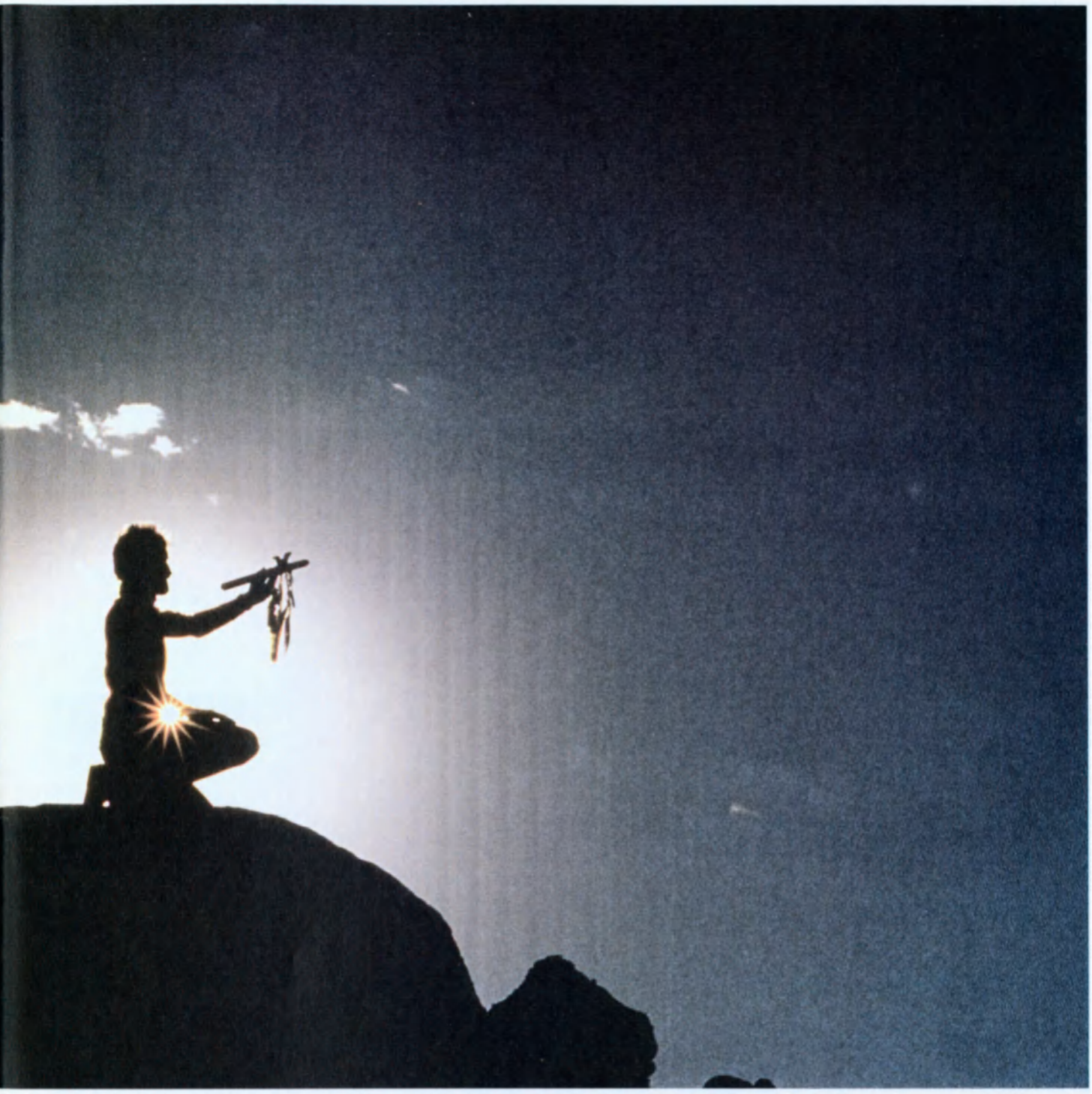
Only recently, however, have such traditional forms of medicine been studied in the West. Their significance and value have been more deeply understood by Westerners thanks to the worldview of modern physics (relativity and quantum theory, thermodynamics)—in which everything is seen in terms of interaction—and decolonization, which has given peoples previously held in contempt an opportunity to make the voices of their cultures heard once more.

Western medicine, which had hitherto regarded human beings as "machines", is gradually coming round to the idea of treating "the whole person", in accordance with an outlook that in some respects links up with that held in traditional societies. The medical model that is thus emerging is no longer interested solely in disease but in health in a general sense, and in the psychological and cultural factors from which it stems.

Those who extol the virtues of progress are sometimes annoyed by certain "irrational" aspects of traditional forms of medicine, but the fact is that they spring from cultures that firmly believe in the existence of a network of interdependences between human beings and the universe at large; a person's relationship with nature, in the broadest sense, is regarded as that of a humble partner, not a proprietor. The various types of traditional medicine, from shamanism to Ayurveda, reflect widely different ways of thinking, but all of them, as the following examples show, tend to see humans as an integral part of the world as a whole, and science and spirituality as being different points on the same continuum.

Shamanism

A feature common to the various forms of shamanism found all over the world, from Siberia to Amazonia, is the practice of diag-



© R. Winslow/Vlesti Ass./Ask Images, Paris

A man with a peace pipe is silhouetted against the sky in Canyonlands National Park, Utah (U.S.A.). North American Indians traditionally regard smoking the peace pipe as an act symbolizing that they belong to the world. The pipe is ritually presented to the 4 points of the compass before being lit.

nosis and therapy through an ecstatic state. In addition to possessing a profound, albeit empirical, knowledge of the medicinal properties of plants, the shaman performs also as poet, soothsayer, healer and sometimes magician and ventriloquist as well, but he is above all else an initiate. Initiation, the personal experience of the threefold mystery of suffering, death and resurrection, bestows an aura of the sacred on him. While he is officiating, his body is covered in signs and objects symbolizing his powers. He is able to communicate with spirits that are invisible to the eyes of the uninitiated, and his words translate the murmurs of the deep forest or the windswept steppes.

As an initiate, he is able to enter in spirit into his patient's body, to drive out demons and pursue them in the world beyond. The convulsing womb of a woman about to give birth thus becomes a universe peopled with monsters and mythical beasts, metaphorically representing the contractions and fears with which she must contend. The shaman can give the ailment not only a name but also material form, removing, often by sucking, from the patient's body or soul the crystals and blood-soaked down he has chewed. ▶

© Dagli Orti, Paris/National Anthropological Museum, Mexico

A man leaning on a crutch consults a physician-priest. This low-relief scene adorns a royal tomb of the 6th Dynasty (mid-3rd millennium B.C.) at Aswan in Egypt.

While the shaman is performing his rites, the patient is never isolated from the world. As during voodoo ceremonies in Brazil or Benin, all his kith and kin are on hand during the "therapeutic drama" that helps purge the sick of their ills. The responsibility for coping with suffering is shared.

Medicine in ancient Egypt

In addition to the meagre information about ancient Egyptian medical practices that can be gleaned from papyri, we can appreciate the anatomical knowledge required by the techniques used in the process of mummification to remove the brain, viscera and eyeballs, and the Egyptians' command of the antiseptic properties of the essential oils, resins, herbs and spices they used not only to embalm the mortal remains of their dignitaries but also to treat many illnesses.

Like scribes, sorcerer-physicians were trained in a "house of life" whose supreme master and first initiate was the ibis, symbol of the god of wisdom. When sleeping, the ibis curls itself up into the shape of a heart, just like the hieroglyph which represents "goodness" and which is made up of three signs—vibration (or air), the individual (through whom life on earth is carried on), and the mouth (through which breathing, also manifested in the beating of the heart, passes). As in Chinese medicine, the "heart speaks" throughout the body.

Hippocrates, the famous Greek physician of Antiquity, who had studied the healing art in the temples of Egypt, divulged the lessons he had learned. His aphorism "We are what we eat" and his pronouncements on the importance of the interaction between people and their environment tie in with the explanation given in the Ebers Papyrus *Treatise on the*

functioning and knowledge of the heart: "Four vessels (*metou*) lead to the liver and convey moisture and air to it. They then cause all kinds of illnesses." As well as being the seat of the intelligence, the "heart" is also the organ that powers and steers the body, distributing energy thereto via the *metou*, which carry air, waste products and blood. Each individual's blood is held to pulsate at its own specific frequency. This pulsatory conception of the human being might explain why so many of the incantations that have been rediscovered were not accompanied by any form of treatment. Others were performed at the same time as particular potions were administered.

Rationalists are often put out by the magical aspect of pharaonic medicine, such as the use of sacred sleep in temples. This therapy, probably induced by hypnosis that weakened self-awareness, might have remained a puzzling phenomenon if sleep cures had not come to be used in modern clinics.

As disciples and servants of Thoth, the compassionate god entrusted by Ra with the protection of humanity, the sorcerer-physicians did not claim to have invented the spells they intoned or the treatments they prescribed. Their lore came from the gods. Learning alone is not, however, enough to make a good physician, whose status is indissociable from that of priest. Not only must he study while young, work hard and long so that knowledge, as it were, comes naturally and grows of its own accord, but he must live an upright life, since "holy things should be taught only to those who are pure".

Aztec angst

Underlying the culture of the Aztecs was a sense of dread stemming from their belief that the world they knew was doomed to be wiped out by fearsome earthquakes, just as the four previous worlds had been annihilated by catastrophes. The gods had had to sacrifice themselves in order to overcome death, and humans likewise had to pay the price of their survival in human blood. The Spanish chronicler ▶

A god of the Mixtec Indians of Mexico (1200-1500 A.D.) associated with medicine.

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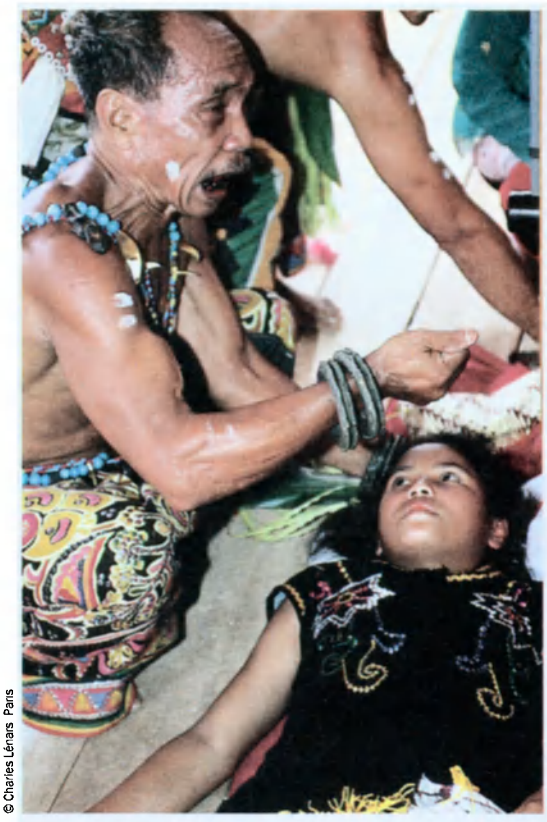

© Charles Lénars Paris

A Dayak shaman in Kalimantan (Indonesia) exorcises a spirit which has possessed a child.

▶ Bernardino de Sahagún, who arrived in Mexico in 1529, relates that never a day passed but that women were sacrificed to the goddess of salt, or children to the rain gods. Their hearts were torn out in order that the sun might not die.

From their earliest years, children were subjected to the severest discipline of a mystical and military hierarchy. Depending on the social class to which they belonged, boys were educated either in local schools which prepared them for the productive work of the community, or in religious schools whose austerity trained them for their future roles as priest-physicians or high officials of the state.

Illness was seen as a divine punishment provoked by a disturbance of the cosmic balance resulting from the failure of the sick to conform to the natural order to which everyone should submit on pain of unleashing the wrath of the gods and bringing on further cataclysms. The responsibility of the soothsayer-priest (*ticitl*), as the humans' go-between with the gods, was therefore not so much to treat ailments that had been sent as punishments as to find out, especially by means of astrology and sacred numerology, what the sick had done to displease the gods. He employed simple forms of divination (recovery was guaranteed if grains of maize thrown down on the ground or into a pot of water did not separate; otherwise the patient would die) but also used hallucinogenic plants such as *peyotl* (*Anhalonium lewini*), a small spineless cactus, and sacred mushrooms such as the *teonanacatl* (*Paneolus campanulatus*), which were eaten to induce the collective trances that accompanied human sacrifices.

The Aztec pharmacopoeia comprised some 12,000 medicinal plants (*patli*) which were sold

© Revelli/REA, Paris

A Quechua Indian in Ecuador blows tobacco smoke at the head of a patient. Tobacco is one of the most widely used plants in the regional pharmacopoeia.

© Béatrice Petit, Brussels

The annual "Awile" ceremony held near Lake Ahémé (Benin) to drive out evil and banish the previous year's sufferings.

in the markets of the main towns and were sometimes grown in the floating gardens known as *chinampas*. They were used mainly for the purpose of treating minor ailments. Among the Aztecs, where the individual was absorbed bodily into the community, illness was regarded primarily as the sign of some disturbance of the cosmic order, fraught with the dread of a punishment on which their afterlife depended.

Sacred medicine and all-round health

Although it is clear from these few examples that traditional medicine is indissociable from the spiritual path chosen by the society within which it is practised, there are certain features common to all forms of such medicine that are absent from modern medicine. These are:

☛ a holistic approach to the individual, seen as a multi-dimensional—at once physical, mental, social and spiritual—being who lives in close interdependence with his or her natural environment and with the vast, mysterious cosmos;

☛ a view of the physician's role as being close to that of the priest, or indeed the sorcerer, at any event of the initiate who needs to have direct experience of death and suffering. The physician has to be upright and pure, and is held accountable to men and the gods, if not indeed to life itself;

☛ learning based upon observation of living reality and a thorough, albeit empirical, knowledge of the natural environment and natural resources, including cosmic rhythms, which are reflected in the fluctuations observable in human health.

Traditional medicine's characteristically global approach to life and the human being is attracting growing interest in the West, which nowadays takes a would-be holistic view of the world—*holos* being the Greek both for "whole" and for "sacred". Hence, the definition of health given by the World Health Organization (WHO) can also serve as a universal definition of the human being considered in all his or her many dimensions: health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." This definition bids modern society to draw inspiration from the wisdom of traditional medicine. It offers modern medicine an opportunity to find the path of harmony and wisdom. ■

A Buddhist remedy

BY HAYAO KAWAI

The unifying approach of Buddhist thought encourages a fruitful relationship between doctor and patient

A major psychological problem of our times is what I call "loss of relatedness". It takes many forms and seems to me to some degree intertwined with the progress of modern science and technology.

Here are two examples taken from my experience as a psychotherapist.

The father of a boy who obstinately refused to go to school over a long period once said to me: "Today human beings can go to the moon and back when somebody merely presses a button. Why can't you find the right button to press to make my son go to school?" In other words, he wanted to operate his son like a machine. Sensing this lack of "relatedness", the son resisted his father, consciously or unconsciously.

Another modern trend is the increase in psychosomatic diseases. Modern medicine, based on the premise of a dichotomy between mind and body, has made great progress in many fields, especially the conquest of disease. But at the same time, this dichotomy seems to be responsible for an increase in psychosomatic illnesses; it is almost as if nature were taking revenge.

I suspect that the rapid progress of modern science has something to do with this. To see whether this is so let us examine the main principles of scientific methodology.

The basic premise of scientific methodology is that the observer must be separated

"The dichotomy between body and mind posited by Western thought seems to be responsible for an increase in psychosomatic illnesses."

© Mike Yamashita/Rapho, Paris

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The Buddha is shown meditating (centre) and preaching on a 5th-6th-century-A.D. mandala from Bamyan (Afghanistan).

from the phenomena that are observed, so that the results of observation are independent of the observer and have universal value. The distinction between subject and object is a great achievement of modern European culture, which can claim thereby to have given science its universal quality.

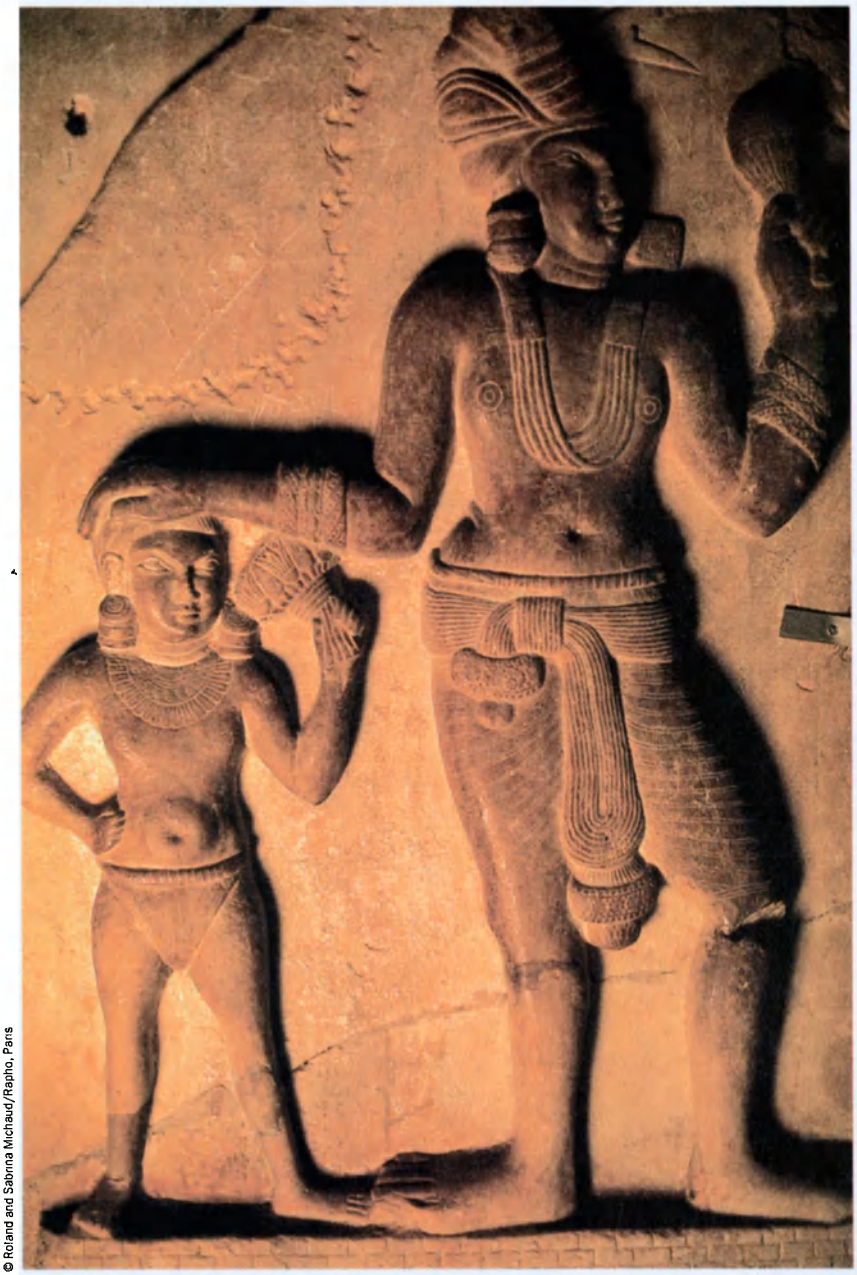
Science has also become inseparable from technology, which is now available to anyone. To use technology, all you have to do is follow the instructions in the manual; you don't need any special skill or ability. As the father of the high-school boy said, a human being can go to the moon just by pressing buttons.

The success of modern technology has led many people to want to apply its methods to family and social relationships. Everybody wants to know the best technique for controlling or managing others. There has been a flowering of "how to" knowledge: how to raise a good baby, how to treat old people, and so on.

The social and human sciences have followed in the wake of the natural sciences and technology. When a researcher can objectify a specific aspect of a human being this approach can achieve reasonable results, but if we think of a person as a whole being, the methods of natural science do not work. A researcher is human, so that it is impossible to make a clear distinction between subject and object; the quality of the relationship between the subject and object always influences the results.

The wholeness of human beings

As a psychotherapist, if I meet a hyperactive six-year-old boy who cannot concentrate on his work in the classroom and try to be as objective as possible and avoid any relationship with him, all I can say is that he is insecure, of low intelligence and so on. However, if I try to ▶



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A father and son are shown in this detail from an Indian Buddhist low-relief sculpture (2nd century B.C.).

establish a good relationship with him, so that he feels protected and is allowed to behave freely, his behaviour will change.

The important thing is not so much to observe his present situation accurately as to wait for his inner possibilities to show themselves. No positive results can be achieved in psychotherapy unless there is a relationship between subject and object. This is also true in education and some fields of medicine. When I have come across patients with psychosomatic diseases I have sometimes deliberately tried not to explore their causes, give advice or use medical drugs. While I have not "cured" these patients, their symptoms have spontaneously disappeared.

This approach is completely different from technology, where everything is very clear-cut. What one should do and the kind of responses one gets are all described in the operating manual: a specific action produces specific results. Instead, I wait for something to happen, without knowing exactly what it will be. My approach is heuristic and I feel that I am creating something. Patients are cured by their creative activities, which are fostered by the relationship between them and me.

The Buddhist approach

I think Buddhism has much to teach us about this kind of relationship.

The most important point stressed by the Buddhist text known as the Garland sutra is that no being has its own innate "self-nature": I am myself because of an infinite number of relations that I have with others. This is a radically different idea from the common belief that everything that exists has its own nature and then has its own relations with others. The Garland sutra starts from the premise that there are relationships and that these relationships define each being.

This Buddhist idea stems from a state of consciousness which is different from the ordinary state in which each object is separated from others. At a different level of consciousness the demarcations between objects become blurred and eventually everything becomes one being which cannot be named. This whole being is called Nothingness because it has no name, but actually one might say that it is Everything.

After this experience, consciousness returns to its ordinary state in which the whole being manifests itself as separate objects or creatures. However, each object is a manifestation of the whole being. In the Kegon School of Buddhism, this is known as "the Arising of True Nature".

This is what I do in psychotherapy when I abandon active intentions and simply wait on events. This attitude is diametrically opposed to that of modern science and technology. Our everyday consciousness is oriented by modern science towards discrimination, whereas in Buddhism it is oriented towards fusion.

Those who are totally dominated by modern scientific thinking may feel that Buddhist ideas are confused or nonsensical. For my part, I think we need Buddhist ideas as a necessary counterweight which may, by admitting the existence of a relationship between subject and object, make a positive contribution to the development of science and technology. ■

Ayurveda in a nutshell

INTERVIEW WITH K. M. SHYAM SUNDAR

Dr. K.M. Shyam Sundar of the Centre for Indian Knowledge Systems (CIKS) in Madras is a specialist in Ayurveda. Here he explains some of the basic ideas of this traditional system of medicine which is still widely practised in India today.

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An Indian miniature showing *pranayama* or breathing control, an exercise in yoga, the Hindu system of philosophy and spiritual discipline.

■ **What does the word Ayurveda mean?**

— The Sanskrit word *Ayu* means *life*, and *Veda* means *to know*. In other words, Ayurveda is the knowledge or science of life. Ayurveda highlights the basic laws and principles that govern life in the universe. As well as being concerned with the origin, development and treatment of disease, it discusses what is beneficial and harmful to life, and what is conducive to happiness and unhappiness.

■ **What is the relationship between Ayurveda and the Vedas, India's ancient religious scriptures?**

— The text known as the *Atharva-Veda* explains the theoretical foundations of Ayurveda and highlights their practical use and methods of application. It contains anatomical descriptions and explanations of certain diseases and methods of treating wounds and ulcers, as well as a discussion of epidemic diseases and their management. The *Rg Veda*, the *Yajur Veda* and the *Saama Veda* also contain material relevant to Ayurvedic medicine.

■ **What are the philosophical foundations of Ayurveda?**

— The core belief of the Indian world-view is that humankind is the epitome of the universe. In each individual there is as much diversity as there is in the world outside. To visualize the self in the entire universe and the entire universe in the self is the highest aim of human evolution. The schools of philosophy in which Ayurveda is rooted thus believe that humankind and the universe have a common origin and are composed of the same basic elements.

■ **What are these elements and how is the body constituted from them?**

— There are five basic elements—earth, water, fire, air and ether. They are known as the *Panchamahabhootas*. Knowledge is perceived through the senses—hearing, touch, vision, taste and smell.

■ **How is the body constructed and how does it function?**

— The basic structural units of the body are known as *dhathus* (the word "dhathu" means "to support"). They are nourished by the ingestion of food. There are seven *dhathus* in the human system—body fluids, blood tissue, muscular tissue, adipose tissue, bone tissue, nerve tissue and marrow, and generative tissue. ▶

■ **The idea of balance is very important in Ayurveda. How does it work?**

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Opposite page, an 18th-century Indian depiction of the network of centres (*cakras*) in the "subtle body", or inner being, of Indian tradition.

Right, warm medicinal oils are poured onto a patient's head. This Ayurvedic treatment is practised at the Arya Vaidya Shala Institute in India's Kerala State.

© Ram Panjaabi, New Delhi, India

— In Ayurveda, the prevention and cure of all diseases are based on what are known as the three *doshas*: *Vatta*, *Pitta* and *Kapha*. They are the biological representatives of the five basic elements which constitute the human body, and in a healthy person they are always in a state of equilibrium. In this balanced state, the three *doshas* control and perform all physiological functions. When the balance between them is disturbed, diseases begin and develop.

The *doshas* pervade the whole body but in the normal or healthy state *Vatta*, *Pitta* and *Kapha* are located in the lower, middle and upper portions of the body respectively.

They support the body as pillars support a building and they are actually referred to as "*Tri Sthuna*" or the three pillars. *Kapha* is predominant during childhood, *Pitta* in youth, and *Vatha* in old age. The day is divided into three parts—day, night and the period for the digestion of food. *Kapha* is predominant in the first part, *Pitta* in the middle part, and *Vatha* in the final part.

The human constitution, both physical and mental, is determined at conception by the permutation and combination of the three *doshas* that manifest in the gametes. This basic constitution of the individual remains constant throughout life. It is known in Sanskrit as *Prakruthi*, which means "natural" or the "original form", and is the expression of the five basic elements.

■ **How is the practice of Ayurveda organized?**

— Ayurveda has eight branches dealing respectively with:

☛ physical diseases caused by functional or systemic disorders;
☛ all organs above the shoulders;
☛ bodily disorders caused by foreign materials such as thorns, grass, stone and nails and involving the removal of pus and highly vitiated *doshas*;
☛ diseases caused by bites of snakes, spiders and other poisons of animal or plant origin;
☛ mental disorders and infectious diseases caused by unknown or unseen creatures or germs. This branch also deals with sacrifices and rituals intended to remove evil spirits;
☛ children's diseases. Methods of purifying breast milk and diseases originating from astrological defects;
☛ improving the quality of body tissues, consequently increasing resistance, strength and intellect, delaying the ageing process and maintaining a youthful body;
☛ increasing the quality and quantity of seminal fluid and ova and methods of increasing sexual desire, vigour and fertility; curing sterility and other related sexual disorders.

■ **How would you define the relationship between Ayurveda and Western thought?**

—Modern medicine and Western thought generalize and categorize individuality. According to the Western concept of normality and health, what is common in a majority of individuals constitutes the norm.

Ayurveda holds that normality must be evaluated individually, since every human being manifests his or her own particular and spontaneous temperament and functioning. In the East, the key to understanding is acceptance, observation and experience. The West, on the contrary, believes in questioning, analysis and logical deduction. Western thought trusts objectivity, whereas Eastern thought emphasizes subjectivity. ■

An Ayurvedic doctor (at left) takes a patient's pulse.

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The healing power of faith

BY JANE SCHREIBMAN

In India, the sick visit the tombs of saints in search of a cure

Top, a sick child who has been cured is ritually weighed during a pilgrimage to a saint's tomb. The equivalent of her weight in sugar will be given to the priest.

For centuries the faithful have been making pilgrimages to the burial sites of holy men throughout the Indian subcontinent. The pilgrims believe that these saints, some of whom are women, have supernatural powers, and that when they died God empowered them with a benevolent force called *baraka* that emanates from the grave and can be used to perform miracles for the living.

Different rituals have evolved at these sites to unite the faithful with this special power and give them spiritual strength. Some of these practices are universal and some are specific to certain tombs. One very common ritual is for a person to be chained to a railing surrounding the tomb or to a part of the building housing it.

The supplicants remain chained until they feel united with the power of the saint. This may take a few hours, or involve attempts lasting several days. After experiencing this union, supplicants wear the chains wrapped around their arms as a badge of honour. It is also common to see the faithful walking in circles around the tomb until they drop from dizziness or exhaustion. When have recovered their strength, they get up and continue. The faithful are led through these rituals, which also constitute an attempt to invoke the spirit of the deceased, by hereditary priests who are often descendants of the holy person buried there. When an infertile woman gives birth, or a sick child is cured, the child is brought back to be weighed, so that a gift of raw sugar amounting to the exact weight of the child can be offered. This is accepted by the priests on behalf of the saint.

If the tomb is located near a body of water, either natural or artificial, the water is consid-

ered to be imbued with curative powers and the pilgrims immerse themselves in it—fully clothed in the case of the women. Another common ritual is that of fumigation. Incense is burned near the tomb. If the illness or misfortune is due to a spirit that has entered the body it will be "smoked out".

Lavish decoration

Any type of behaviour, as long as it is not destructive, is accepted at these locations. People are allowed, even encouraged, to forget everyday restraints and sing, dance or shout to their hearts' content. The tombs are lavishly decorated, and many sites house additional shrines and cenotaphs dedicated to lesser sacred personages.

A visit to the tomb is a break from the arduous routine of daily life and the strict social controls of Indian society. The more popular locations are equipped with small rooms around a courtyard in which entire families can stay overnight, or for a few days. Visits to these tomb sites have become part of the secular tradition of the people, attracting them regardless of their religious affiliation or walks of life. They are places where rich and poor, uneducated and educated, Muslim, Hindu, Christian and Jain all come together, some to be cured of illnesses and some to be helped to cope with their everyday problems—lost love, debt, despair. People whose wishes have been granted return to give thanks throughout their lifetime. ■

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A mother gives her daughter a ritual bath.

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A young woman makes a wish by knotting string on the latticed wall of a saint's tomb.

Two complementary therapeutic traditions coexist among the Haalpulaaren people of Senegal

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Senegal: a mirror of the cosmos

BY EMMANUELLE KADYA TALL

African traditional medicine seeks both to cure disease and to make sense of misfortune and illness.

In addition to herbal or biochemical remedies, a patient must be given psychological and social back-up, which plays an equally important part in the cure. This has long been known in traditional African medicine, which tries to place the occurrence of illness in a context, to integrate a specific ailment into a wider framework of disorder and decipher its meaning.

In keeping with a widespread African notion of the punishment of evil, traditional healers regard a sick person as the victim of external aggression of human or supernatural origin. It is not so much the details of a symptom as its recurrence and association with other symptoms which determine the choice

Opposite page, a sacred baobab at M'Bour (Senegal). Sick patients pray for a cure as they walk 7 times round the majestic tree.

of remedy. If the symptoms persist, the search for a cure is extended to other systems of medicine including biochemical treatment to relieve physical pain and traditional treatment to appease evil spirits.

The two systems exist more in harmony with each other than in competition. Biomedicine concentrates on the patient's body, overlooking the fact that the patient is a social being. The traditional healer takes account of the social aspect and diagnoses the illness in accordance with a system of symbolic interpretation shared by the whole community. Traditional cures, empirical as they are, are rooted in the symbolism of a society, such as its cosmology.

The Haalpulaaren of northern Senegal

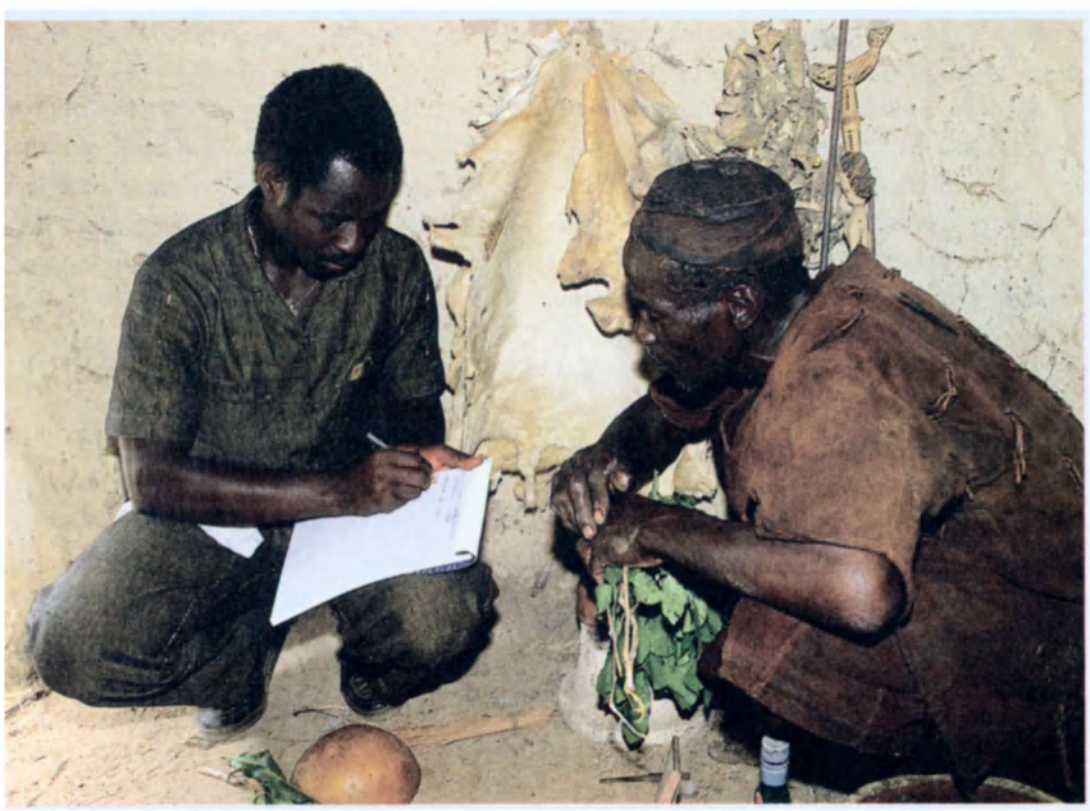
The theoretical and practical medical knowledge of the Haalpulaaren people of northern Senegal is based on several traditions. These farming people who have been in contact with Islam since the eleventh century, are divided into lineage groups originally based on social and occupational categories (marabouts, hunter-warriors, fishermen, craftsmen and slaves). Each group has its own special field of knowledge. The hunter-warriors, fishermen and shepherds know about ecology and medicine. The descendants of the *toorooBe* group ("God's beggars") are conversant with Islam.

Craftsmen have highly specialized knowledge of healing. Blacksmiths, through their mastery of iron and fire, soothe burns and lance abscesses. Weavers tie knots to stop headaches and toothache. Leather workers make small bags to contain the writings prescribed by marabouts. Everyone acquires some basic therapeutic knowledge during their apprenticeship, but some are naturally gifted healers and only one of these is recognized as such in each generation and lineage group. He acquires his knowledge from his group and his activity is confined to the home and the village. Sometimes, however, his reputation spreads to the whole region.

These types of healing are not based on a divinatory form of investigation into the causes of illness but on observation and experience, and the purpose of a cure is only to make the symptoms and physical pain disappear.

Oral and written wisdom

There is another, more scholarly and secret tradition among marabouts and hunters of sorcerers (or counter-sorcerers). Marabouts never interpret an illness in terms of sorcery because sorcerers belong to a pre-Islamic universe rejected by Islam. They rely on writing, the instrument of the Qur'an. Counter-sorcerers, who belong ▶



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A nurse (left) questions a healer at Kedougou (Senegal) about the plants he uses.

to a more relaxed pagan universe, combat sorcerers and use the spoken word, the medium of the traditional pre-Islamic world. The two groups stand far apart and do not share the same cosmological landmarks, but their rivalry does not prevent them from working together.

They both start by asking themselves why their patients are ill. Their powers of healing are based on being able to give explanations consistent with the theory and practice of cause and effect in Haalpulaar culture.

Evil spirits

Apart from the will of God, there are three possible main causes of illness and misfortune: the actions of sorcerer-cannibals and spirit-devils, and "maraboutage" or magic.

Sorcerer-cannibals are human beings who leave their bodily form and go off in spirit form to hunt the spirit of their prey. They belong to the pre-Islamic world of "drinkers of blood", a parallel group modelled on human society. They meet at night and organize feasts to which each of them must bring in turn their contribution of human flesh. Sorcerers attack their victims by entering their belly. The symptoms of a sorcerer's attack are hard to detect because the Haalpulaar medical system relies less on nosology (the analysis of symptoms) than on aetiology (the study of causes). But some symptoms, like unexplained fainting followed by delirium, young children having nightmares, spitting blood, bloodshot eyes or nosebleeds, are immediately seen as sorcery.

Spirit-devils are creatures that form part of Islamic culture. Of monstrous appearance, they haunt certain places at certain times of the day when the primitive world reasserts its rights over the domesticated world. A person who breaks social laws by walking through the bush at midday or midnight, or who crosses a deserted village square may have an unpleasant encounter. The mere sight of these spirits and devils can trigger off pathological states ranging from mental disturbance to partial or total paralysis. Their vigorous breathing enters the victim's body and leaves traces such as swellings, paralysis and damage to the intelligence, indisputable evidence of their attack.

"Maraboutage", or "bewitchment" is an activity which is widely found in other societies where it is known as black magic or witchcraft. There are no symptoms enabling it to be

diagnosed. However, a range of indispositions and minor accidents are attributed to this kind of aggression. Bewitchment targets the social personality of the subject and its most extreme effect is imbecility. Used constructively, bewitchment can increase a person's social abilities, and in this case it is highly appreciated. Some Islamic priests are great experts in this.

Three divisions of the body

The Haalpulaaren divide the body up in three ways—symmetrically, with a left and a right side, transversally, with the right leg associated with the left arm and vice versa, and vertically, from top to bottom.

The first division symbolizes the contrast between masculine (right) and feminine (left). The second is connected with the distortion caused by the breathing of spirit-devils. The

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A healer at work in a Dakar street (Senegal).

third corresponds to the progress of an illness, always from the bottom upwards. Headaches, for instance, are often said to originate from an illness lower down in the body. Therapy is thus designed to make the illness go back down to the lower limbs from which it can leave the body more easily.

Symptoms and causes

The healing arts include physical techniques, herbal preparations, writings and incantations, which are often used in conjunction.

Massage, touching, cauterization, cutting the skin, knots of cotton thread are all designed, along with incantations and writings, to ease pain, cast out the disease and protect the sick person.

Medicinal plants are used to purify or heal. Purification is carried out by taking baths, inhaling decoctions of leaves and roots, fumigating the head or administering enemas. Swallowing powders and potions also helps.

Short and fervent incantations (*cefi*) and writings (*binndi*) belong to pre-Islamic and Islamic tradition respectively. The former use the spoken word to connect humans directly with the plant and animal world. Each group has *cefi* enabling it to work harmoniously with its natural environment. With the written word (*binndi*), communication is indirect. The marabout writes on a piece of wood a few Qur'anic verses, figures derived from some of the verses, or prayers to God. Then he wipes the board with cotton soaked in water and gives it to the patient, who will keep it in a bottle of water which he will drink or use to wash himself.

So the traditional healer works on two levels—symptoms and causes. On the first level, he fights the visible evidence of the illness; on the second, he attacks the illness at its root. ■

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NO MARO
2 WEEKS

Zimbabwe: a healer in the marketplace

BY KRISTOPHER WALMSLEY

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Gordon Dhliwayo, a *n'anga* or traditional healer, at a market in the suburbs of Harare, the capital of Zimbabwe.

In Zimbabwe, traditional healers are on call to solve all kinds of medical, social, spiritual and cultural problems

In his "office" in the Mbare *musika*, a market on the outskirts of Harare, the capital of Zimbabwe, Gordon Dhliwayo is almost hidden behind heaps of twisted roots, earthtone powders, forbidden furs, horns, bones and shells that clutter the small table in front of him.

Dhliwayo is a *n'anga* or traditional healer. To reach him for consultation, you pass by umpteen tables of tomato and cabbage sellers, browse over piles of fruit, and continue through the kitchenware section—mainly hand-carved wooden utensils and baskets beautifully woven with intricate designs.

The ordinariness of the dozen healers practising in the market is striking. Dhliwayo wears a dingy jump-suit, and were it not for the horse tail in one hand and the tortoise-shell in the other, you might take him for a garage hand. His appearance belies the powerful talents ancestral spirits have bestowed upon him.

One secret his grandmother never told him was to put butter on a burn. A good *n'anga* knows that crushed ostrich egg is the proper remedy, and instead of a low dose of buffered aspirin when baby has a headache, Dhliwayo recommends pulverized sea shells rubbed into a small incision on the infant's head. Grown-ups should smoke twigs of the *mufandichimuka* bush and call him in the morning.

Mutual respect between modern and traditional healers

Nineteenth-century colonialism bred scepticism which resulted in the Witchcraft Suppression Act, which forbade traditional healing in what is now Zimbabwe. Today, the *n'angas* at Mbare's *musika* and another 25,000 of them throughout the country are licensed by the Zimbabwe National Traditional Healers Association (ZINATHA). This association was established in 1980, shortly after the Rhodesian government was replaced by a parliamentary democracy, and the country renamed itself Zimbabwe.

Since independence, ZINATHA has offered recommendations to the government on the acceptance and use of traditional medicine. Currently, the association is co-operating with the University of Zimbabwe on research into the herbs used by its members. Mutandi Sibanda, a spokesman at ZINATHA, estimates that 96 per cent of the population consult *n'angas*, including patients from abroad and even Western medical doctors practising in Zimbabwe.

What may have disconcerted the colonists is that *n'angas* offer more than health care. If your afflictions are not in your body, but in the courtroom, the *n'anga* has a cure. Some *n'angas* have had to face the courts on charges of malpractice. Sibanda notes, however, that since legal recognition of the herbalists under the auspices of ZINATHA, such cases and other allegations of quackery have decreased. Understanding and mutual respect between modern and traditional healers have developed outside the courts through workshops and information exchanges. Most significant is the training *n'angas* are receiving to incorporate HIV/Aids awareness, prevention and care activities into their work.

"As long as we have our society," says Sibanda, "there will be a need for the *n'anga* to help with medical, social, spiritual and cultural problems." ■

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China: the full treatment

BY TING HOR

Chinese doctors see illness as triggered by unbalanced relations between the organs and treat the body as a whole rather than its constituent parts

In a Chinese hospital, surgery is performed under local anaesthetic induced by acupuncture.

Doctors in modern Chinese hospitals wear ties and white coats and look very much like their Western counterparts. However, the similarity stops there.

At the beginning of a consultation, a doctor takes your pulse in a special way, with three fingers, and then carefully examines your tongue. He will use imagery to describe his diagnosis. "The wind and the cold have attacked your lungs," he might say.

The medicines used are mostly extracted from plants, but animal and mineral substances are also prescribed. In this particular case the purpose of the pharmaceutics will be to "chase away the wind and the cold and add some earth to produce gold."

In other cases, the doctor may order an acupuncture session, or the application of burning "sticks" of medicinal herbs (moxa treatment), or else Chinese massage to "unblock the meridians". Other remedies include suction cups, plasters and wires under the skin.

The notion of balance

Chinese medicine is as old as Chinese civilization itself but it was only established as a formal doctrine in the third century B.C. Its theoretical basis, which has never changed since ▶

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Above, a country doctor takes a patient's pulse in Sichuan (China).

Qi (air or breath), one of the basic concepts of Chinese medicine, informs the doctor via the pulse about the state of each physical organ. Right, a 17th-century Chinese engraving.

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then, springs from the Taoist principles of *yin* and *yang*, the five movements, and *qi*.

Taoists use these terms to describe natural phenomena. Thus day is *yang* and night is *yin*. The two are intertwined and blend to produce a complete day. The whole universe works on the same principle. When *yin* and *yang* are in harmony, we feel well. When they are not, we feel ill. When they are separated, death ensues.

The aim of Chinese medicine is to restore a balance, to harmonize *yin* and *yang* through the "five movements"—represented by nature's five most common elements, wood, fire, earth, metal and water. Taoists have studied the relationships between the five and devised a system of references enabling them to understand the world, including all aspects of life.

A map of the body

In accordance with this system, doctors have divided the body up into five kinds of functions, each represented by an "organ". Physiologically speaking, each function is the basis of another one and is under the control of a third. The lung, for example, is supported by the spleen and is controlled by the liver. Illness occurs when these links are disturbed. If the spleen does not give the lung sufficient support, the lung becomes diseased. Hence the spleen has to be stimulated so it supports the lung properly again, making treatment more effective. This is why, in the example mentioned above, the doctors decided to "add earth (the spleen) to produce gold (the lung)."

But how do you "add earth"? The answer is through *qi*, one of Taoism's most metaphysical concepts. In modern Chinese, the word means "air", but Taoists use it to explain particular natural or social tendencies. To Chinese doctors, it means, broadly speaking, a function. Certain plants or animal or mineral products have the ability to improve the *qi* of certain organs. *Qi* also tells the doctor, through the pulse, the state of each organ (depending on whether the pulse is strong, weak, fluid, delicate, noisy, etc.). The appearance of the tongue is also *qi* "speaking" to the doctor. And it is *qi* which travels around all the body's "meridians".

Meridians pass right through the entire body and connect the inner organs to the surface. There are fourteen main ones, with 360 points of contact with the skin from inside the body. By stimulating the meridians, e.g. with needles, or with "burning" moxa herbs or by massaging the contact points, *qi* can be adjusted to re-establish the balance of the body's *yin* and *yang*.

All imbalances are due to a "change of climate" brought about either by one of the six "external causes" (wind, cold, heat, humidity, drought and fire) or by one of the six "internal" ones (happiness, anger, sadness, anxiety, obsession and terror). There are other causes which do not fit into either category, such as unhealthy life-styles or accidents.

Chinese doctors do not try to make an in-depth diagnosis of a part of the body. They make an overall prognosis and treat the patient as a whole. They do not treat a specific complaint, such as an ulcer, but the entire body. The biological mechanism involved in such therapy has not been clearly established. Some think doctors encourage patients to cure themselves. Others believe the immuno-defence system is activated. Be that as it may, the strategy of helping "good" *qi* to chase away "bad" *qi* avoids aggression against the body and minimizes side-effects, and it is this that has helped to make Chinese medicine popular in the West.

Question marks

Is it scientific? "Cold" and "wind" cannot be seen under a microscope, and there is no scientific way of measuring *qi*. Thus, although researchers have found "traces" of meridians in the laboratory, Western doctors do not consider Chinese medicine as being scientific. On the other hand, some Chinese doctors claim that modern methods of scientific investigation are still too limited and rudimentary to detect the basic principles applied in Chinese medicine. But the aim of medicine is not the same as the aim of science. Therapy is first and foremost the art of healing. If something works, you do not need to know the reason why.

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The 5 "movements" or most common material elements in nature: wood, fire, earth, metal and water. Their balance keeps the body in good health.

Is it better than other systems of medicine? Like them, it is more effective in some instances than others. Its global approach helps in treating psychosomatic illnesses and chronic or functional diseases, for example. Acupuncture works with sporting injuries. But Chinese medicine is not so good when it comes to emergencies or acute conditions. It is not magic or universal—it is not a panacea, in fact.

What of orthodoxy? The apparent orthodoxy of natural medicines is an illusion of which we should be wary. In Chinese medicine, as in other areas, there are fashions, fads and trends. A search for traditional remedies at all costs leads to bigotry and superstition. The spirit of the ancient wisdom should certainly be preserved, but the world is a changing place. When practised outside China, Chinese medicine encounters new circumstances, new aims and a different range of drugs. Even in China, people from the north are not treated medically in the same way as people from the south. The best way to grasp the most subtle, traditional and authentic aspects of Chinese medicine is to understand that its essence is its ability to adapt. ■

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A model used to teach acupuncture in China.

The *yin/yang* symbol depicted in the form of fish. The interaction of these two complementary principles of Chinese philosophy is thought to maintain the harmony of the universe and the human body.

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FACT FILE

MEDICINAL PLANTS IN ASIA (APINMAP)

The Asian Pacific Information Network on Medicinal and Aromatic Plants (APINMAP), which was set up in 1987 with UNESCO support, is an extremely useful data base in a region where traditional medicine and pharmaceutics are of great importance.

APINMAP helps its 14 member countries (Australia, the People's Republic of China, the Republic of Korea, India, Indonesia, Malaysia, Nepal, Pakistan, Papua New Guinea, the Philippines, Sri Lanka, Thailand, Turkey and Viet Nam) to improve their ability to collect, process and use research data on medicinal and aromatic plants. Its data base contains some 14,200 entries.

It has joined forces with the Canadian International Development Research Centre to produce a CD-Rom on health developments in Asia, which will help to promote Asian traditional medicine around the world.

Further information from:
APINMAP Secretariat
Philippine Council for Health Research and Development
Department of Science and Technology
General Santos Avenue, Bicutan
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Fax: (63-2) 823 89 42 or 823 89 37
Telex: 67608 PCHRD PN

SPOTLIGHT ON TRADITIONAL AND FOLK MEDICINE

UNESCO is supporting the publication of a catalogue designed to make Asia's traditional and folk medicine more widely known and help further research in the fields of pharmacology and plant medicine. The project is being carried out in co-operation with the Republic of Korea and UNESCO's Regional Network for the Chemistry of Natural Products in Southeast Asia. It is being implemented by the UNESCO office in Jakarta (Indonesia).

The first volume of the catalogue was published in 1996 under the title *International Collation of Traditional and Folk Medicine, Northeast Asia, Part I*. Covering Korea, China, Japan and Hong Kong, it identifies and studies the active agents in 200 medicinal plant species. Volumes II (published in 1997) and III (in preparation) are a continuation of Volume I and each include 200 plant species. The final two volumes will cover not only plants but fungi, seaweed and animal and mineral resources.

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International Collation of Traditional and Folk Medicine, Vol.1 - Northeast Asia, Part I,
Takeatsu Kimura (Editor-in-Chief), Paul P. H. But, Ji-Xian Guo and Chung Ki Sung (Editors.), World Scientific, Singapore, 1996.
Vol.2 - Northeast Asia, Part II,
Paul P. H. But (Editor-in-Chief), Takeatsu Kimura, Ji-Xian Guo and Chung Ki Sung (Editors), World Scientific, Singapore, 1997.

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Ginkgo

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Hawthorn.

WHO SUPPORT FOR TRADITIONAL MEDICINE

Despite the increase in international trade in herbal medicines and other types of alternative medicine, the potential of traditional medicine is far from being fully utilized in most national health systems.

Many elements of traditional medicine are beneficial, but others are not. The World Health Organization (WHO) encourages and supports countries' efforts to find safe and effective remedies and practices for use in health services while not endorsing all forms of traditional medicine.

Most of the population in developing countries still rely mainly on traditional practitioners and local medicinal plants for primary health care, and interest in traditional and alternative systems of medicine has grown in industrialized countries during the last decade. In the United States it is estimated that one-third of the population uses at least some form of alternative treatment such as herbal medicines, acupuncture, chiropractic and homeopathy. Surveys in European countries have shown similar interest: 60% of the Dutch and Belgian public have expressed their willingness to pay extra health insurance for alternative medicine, and 74% of the British public favour complementary medicine being available on the national health service.

Herbal medicines have existed for many centuries, but only a relatively small number of plant species—about 5,000—have been studied for their possible medical applications. Safety and efficacy data exist only in respect of a much smaller number of plants, their extracts and their active ingredients. The establishment and use of regulation procedures and quality control have become major concerns in both developing and industrialized countries.

Acupuncture is used worldwide because of the simplicity of its application, its minimal side-effects and its low cost. It has been in constant use in China for thousands of years, and spread to other oriental countries long ago. By 1990, 62,000 of Europe's 88,000 acupuncturists were medical doctors, and acupuncture users totalled 20 million. Consumer surveys consistently show positive public attitudes to complementary medicine—90% of the pain clinics in the United Kingdom and 77% in Germany use acupuncture.

There are 19 WHO collaborating centres for traditional medicine, 8 of which are involved in training and research on acupuncture, while the others are conducting research on herbal medicines. These centres have made a major contribution to the international standardization of herbal medicines and acupuncture, and to the exchange of information.

In China, where traditional medicine is widely practised, each province has a college and a research institute for Chinese traditional medicine. In India, the government provides financial research and development support for the Ayurvedic and Unani systems and their increasing involvement in the delivery of health services. Such systems are seen as allies in the delivery of primary health care. Research institutes and foundations have also been established in industrialized countries, such as the Office of Alternative Medicine in the United States. A group set up by the European Commission is investigating the therapeutic significance of unconventional medicine, its cost-benefit ratio and its sociocultural importance as a basis for the evaluation of its possible use in public health.

WHO strongly supports the further promotion and development of the rational use of traditional medicine throughout the world.

Source *World Health Report*, WHO, 1997

"Culture and Health" was the theme of the March-April 1996 issue of the WHO magazine *World Health*.

Further information from:
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Website: http://www.who.ch/

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Horse chestnut

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Diarrhoea (including dysentery) 2.5 million million deaths
Malaria 2.1 million deaths
HIV/Aids 1.5 million deaths
Hepatitis B 1.2 million deaths
* = noncommunicable diseases

Source: *World Health Report 1997*, WHO, 1997

Further information from:
Thomson Prentice, Health Communications and Public Relations,
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AN INTERNATIONAL CONFERENCE

"Culture and Health" was the yearly theme chosen for the World Decade for Cultural Development (1988-1997) in 1996, and in May of that year UNESCO and WHO held an international conference on the subject at Chiang Rai (Thailand).

The Conference drew attention to the dangers implicit in the body-mind dichotomy in the medical context and put the debate between traditional and modern medicine in a broader perspective. It stressed the need to reconcile the two approaches in the treatment of illness and to explore a number of issues including the use and "modernization" of traditional medical practices, endogenous development of community health care for self-reliance, the use of herbal remedies, and the study of indigenous food habits and traditional lifestyles in different cultures.

Attention was also drawn to the importance of non-physical factors in health and healing. Health should not be divorced from the social and cultural context. It is now known, for example, that people who live alone and suffer from loneliness tend to live up to ten years less than those who have close personal relationships.

The proceedings of the conference will be published in 1998, together with a booklet for the general public. UNESCO and WHO were also urged to organize an international conference on "Culture, Ethics and Health".

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30 FACTS FROM THE WORLD HEALTH REPORT 1997

Population and life expectancy

1. The world population reached 5.8 billion in mid-1996, an increase of more than 80 million over the previous 12 months; in 1990, the increase was 87 million.

2. Between 1980 and 1995, life expectancy at birth increased globally by 4.6 years (4.4 years for males and 4.9 years for females).

3. There are now 380 million people aged 65 years and above. By the year 2020, the over-65 population is projected to increase globally by 82%.

4. For every baby born today in an industrialized country, there are ten people aged 65 or over. By the year 2020 there will be 15 such elderly persons for each newborn child. In developing countries, the ratio today is 2 people over 65 for every newborn child, and 4 for every newborn child by 2020.

5. Life expectancy at birth was 48 years in 1955; 59 years in 1975; and 65 years in 1995.

6. In 1960, most deaths were among people under 50. Today, most are among the over-50s.

7. By 2025, more than 60% of all deaths will be among the over-65s, and more than 40% among over-75s.

Infant and child health

8. Deaths among children under 5 years declined from 19 million in 1960 to 11 million in 1996.

9. About 5 million babies born in developing countries in 1995 died in the first month of life.

10. Coverage of children immunized against 6 major childhood diseases increased from 5% in 1974 to 80% in 1995.

Causes of death

11. Of over 52 million deaths in 1996, over 17 million were due to infectious or parasitic diseases, more than 15 million to circulatory diseases, over 6 million to cancers and about 3 million to respiratory diseases.

12. Of over 52 million deaths in 1996, 40 million were in developing countries, including almost 9 million in the least developed countries.

Infectious diseases

13. The leading killer among infectious diseases in 1996 was acute lower respiratory infection, which killed 3.9 million people.

14. Tuberculosis killed 3 million people in 1996.

15. Diarrhoeal diseases killed 2.5 million people in 1996.

16. Malaria killed between 1.5 million and 2.7 million people in 1996.

17. About 1.5 million people died of HIV/Aids in 1996.

18. Worldwide, 75-85% of HIV infections in adults have been transmitted through unprotected sexual intercourse, with heterosexual intercourse accounting for more than 70%.

19. Leprosy registered prevalence cases fell from 2.3 to 1.7 per 10,000 population between 1995 and 1996, and the problem has been reduced by 82% worldwide in the last 11 years.

20. The Onchocerciasis Control Programme which began in West Africa in 1974 has now protected an estimated 36 million people from the disease.

21. More than 120 million children under 5 in India were immunized against poliomyelitis in a single day in 1996.

22. Field trials in Africa in 1996 showed that insecticide-treated bed nets can reduce childhood deaths from malaria by up to 35%.

Noncommunicable diseases

23. Tobacco is calculated to cause 3 million deaths a year mainly from lung cancer and circulatory diseases.

Cancer

24. About half of the more than 6 million deaths from cancer in 1996 were due to cancers of the lung, stomach, colon-rectum, liver and breast.

25. Smoking accounts for one in 7 cancer deaths worldwide.

Mental disorders

26. An estimated 45 million people are affected by schizophrenia. There were 4.5 million new cases of schizophrenia and other delusional disorders in 1996.

27. An estimated 28 million people worldwide incur significant health risks by using psychoactive substances other than alcohol, tobacco and volatile solvents.

Occupational health

28. Occupational accidents account for more than 120 million injuries and at least 220,000 deaths a year.

29. There are about 160 million cases a year of occupational diseases, of which 30-40% may lead to chronic disease and 10% to permanent work disability.

30. Only 5-10% of workers in developing countries, and 20-50% in industrialized countries, have access to adequate occupational health services.

commentary

Federico Mayor

Africa and the world

"Universal peace will one day come about not because human beings will become better (that is too much to hope for), but because a new order of things, new science and new economic needs will force peace upon us". These prophetic words were written by Anatole France. This new order of things and the new science and new economic needs he announced have now come to pass. If war is still raging in many corners of the earth, it is because most people have not yet grasped this changing situation.

It might have been thought that the end of the cold war would have liberated resources from which development and peace would have benefitted. However, such transfers have been few. It might have been thought that the globalization of communication, which has turned the planet into a single community—a village, it is said—would have broadened the sense of unity and, by abolishing distance, would have *ipso facto* created global solidarity. Nothing could be further from the truth.

Paradoxically, peace has never been more threatened than it is at present. The reshaping of geo-strategic interests and the emergence of new, less tangible types of risk have given rise everywhere to a wait-and-see attitude, and indeed to mistrust and withdrawal. As interdependence increases and extends beyond economics and finance to include social life and the environment, new divisions are appearing—both between states and within national communities. Poverty and exclusion are growing. Rather than broadening our horizons, the change in our relationship with things both far and near either makes us lose all our bearings or else withdraw dangerously into ourselves. What Bill Gates blithely calls "friction-free capitalism" is clearly liable to increase marginalization and inequality.

I am not blaming the process of globalization, which in many respects liberalizes and even liberates, and forges new ties. Globalization is neither good nor bad. It is what the human community makes of it—further proof that good fortune smiles on the rich, the selfish and the cynical, or else a sign that justice, dignity and solidarity have not entirely disappeared from the face of the earth. It can be a great opportunity or a great danger. Like knowledge, it is neutral by nature and takes on meaning and value from the way it is used.

There is only one world, yet there are so many differences, such lack of symmetry, so many contrasts. The gap between rich and poor in this "smaller" world is constantly widening. In what we coyly describe as the "least developed countries", and especially in Africa, poverty is growing worse. Their share of world trade is still tiny. In some cases, economic marginalization goes hand-in-hand with social disintegration, spiralling violence and increases in armed conflicts, and sometimes countries lapse into fraudulent practices. Other countries, on the other hand, have developed political and economic capacities which open up new possibilities in their relations with foreign partners.

There are therefore countless situations and very different levels of development. However, the economies of the developing countries, where three-quarters of the world's population live, account for less than 10 per cent of gross world product. Africa—which is certainly not lacking in resources—accounts for less than 3 per cent of this gross product and its share of world trade is less than 2 per cent. The international economic context accordingly continues to be characterized by enormous disparities that are fraught with risk and conflict. These disparities seem to grow even

worse within countries themselves, contributing to an increase in the risks of social upheaval and threatening the stability of a large number of African countries.

Africa: globalization's forgotten continent?

The study of recent developments and the extrapolation of trends in several fields do not encourage optimism. From the standpoint of the balance between population and resources, the situation in tropical Africa is disastrous as far as the immediate future is concerned, since population growth will remain high for several decades, while a large proportion of the region's lateritic soil is irretrievably exhausted and rules out any increase in agricultural production.

In spite of striking examples to the contrary like that of South Africa, as far as civil peace is concerned, we know what the situation is in Algeria, in the Great Lakes region and in other regions where there are a host of latent or low-intensity conflicts. What are sometimes known as the "new African dominoes" remain largely unpredictable, at least to the outside observer puzzled by the logic of African wars.

The picture as regards democracy is mixed. It is true that the on-going democratic reforms give the impression that the process is irreversible. Since 1990, more than twenty African countries have held free elections. This is enormous progress compared with the early decades following independence. But the progress of "African democratization" is uneven and the results are varied. What is more, democracy is a culture in itself, which cannot be improvised or expected to take root after only a few years. In a region like Africa, the demise of traditional social systems and the weakening of religious authority can, even with the best of intentions, leave the door open to the most negative aspects of tribalism and dictatorship.

The progress of 'African democratization' is uneven and the results are varied.

The crisis which the continent is currently going through is also, to a significant degree, institutional. Macro-economic stabilization, no matter how necessary it may be, will always be inadequate if it is not accompanied by a strengthening of the African state. How is it possible for an effective and pro-active state, playing a key role in the necessary reforms, to emerge in order to ensure that economic development will be in harmony with a country's society and culture? In fact, in many cases, it lies with societies and cultures in the plural, since colonially-created divisions of territories have been instrumental in causing the cultural fragmentation that is common in Africa.

How can a state under the rule of law be encouraged and supported so as to create the conditions for development, for the reduction of inequality and the rolling-back of poverty? It can be done by placing more emphasis on the institutional aspect of co-operation and by strengthening political relations between the rich countries and Africa. The failure of structural adjustment policies will at least have confirmed one thing: that far from general solutions presented as recipes or panaceas, it is necessary to know, analyse and understand the specific individual paths taken by the African countries. Even in instances where some countries in the same cultural region may appear to have features in common, each nation, perhaps more so than in Europe, has its own history, traditions, myths, demons and strong points, in short its specific characteristics.

If these specific features are not taken into account, if the law of the market alone continues to rule, if liberalism is not accompanied by any social concern, how will Africa find the resources and mobilize the energy that will enable it to be integrated harmoniously and with dignity into the world scene?

(To be continued) ■

Greenwatch

The biosphere reserves of Senegal

BY FRANCE BEQUETTE

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The winding ochre-coloured dirt road runs for several kilometres between two walls of tall golden grass broken by occasional burnt clearings. A hornbill takes off in flight. A family of warthogs ambles by. This is the vast Niokolo-Koba National Park, created in Senegal in 1926 and one of the first in Africa. The 913,000-hectare park, the central part of which is completely protected, is administered under the programme for the management of the Upper Niger and Gambia river valleys.

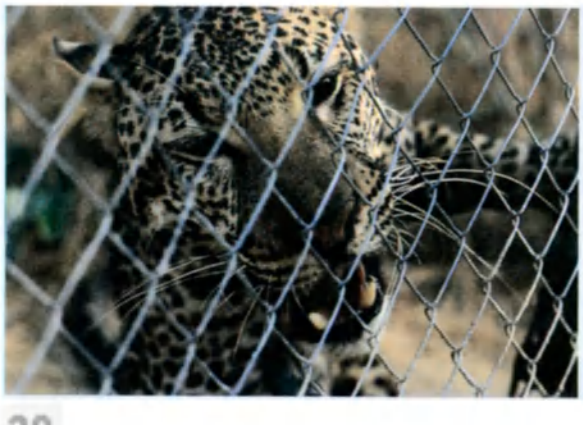
The importance of Niokolo-Koba, which contains exceptionally rich animal life, came to be seen when it was classified as a UNESCO biosphere reserve and a World Heritage natural site in 1981. It receives some 3,000 visitors a year and, with the neighbouring park at Badiar in Guinea, will soon form a large transnational biosphere reserve.

SIMENTI POOL

At Simenti, in the middle of the park, there is a hotel, a camp for game wardens and a viewing platform overlooking the wide, muddy Gambia river, which flows lazily between stands of bamboo linked to giant trees by tangles of flowering creepers. A troop of green monkeys scamper about in them. Further away, on a sand spit, are a fish eagle and a herd of guib (*tragelaphus*), a species of harnessed antelope with a white-spotted or striped coat.

The pool at Simenti—a natural depression of stagnant water formed at a bend in the river—is replenished in the dry season by pumping. A large number of animals go there to drink. During the dry season the last traces of greenery are also to be found there. From the viewing platform, all kinds of antelopes (giant or Derby eland, roan antelope, Buffon's kob and Defassa waterbuck), warthogs and aquatic birds can be seen. The common enemy here is *mimosa pigra*, a prickly thorn bush which is slowly encroaching on the grass on which the animals live. Elephants, lions and panthers also roam the park. Unfortunately, poaching is widespread. Shortly before I arrived, the game wardens had rescued a pair of baby panthers whose mother had been shot. They are now living in captivity at the camp, but lack of funds means they have to feed on a diet of only one goat every three days!

Panthers in Senegal's Niokolo-Koba National Park are victims of intensive poaching.



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OPEN AND LATENT WARFARE

Poachers keep the 150 game wardens on a war footing. Already eight wardens have been shot dead and five others wounded. Three soldiers have also been killed. The day we were leaving, poachers were reported nearby. How did the game wardens spot them in the dense vegetation? They found bicycle tyre marks in the ashes of a clearing where a fire had been lit to help the pasture to grow back. Hunters, who spend months at a time in very remote areas, obtain water and food from villagers who travel around on bicycles and in return take back slaughtered game to their villages.

The poachers are better armed than the game wardens. More than 93 per cent of the wardens are also due to retire in 2002, which worries Lieutenant Boucar Ndiaye. Unless new ones are engaged, there will only be ten wardens to watch over almost a million hectares. Money is a big problem. The wardens have only three vehicles with badly worn tyres, no radios and not even a chainsaw.

The situation is the same on the Guinean side. Fifty game wardens fresh from a new training centre at

Forest clearance by fire encourages the growth of grazing for animals but destroys the balance and resources of the ecosystem.

Dalaba have not been hired because there is no budget for them. The Badiar park, which is also new, is gradually losing all its wildlife to hunting by people from nearby villages, many of whom have kept the weapons which the late dictator Ahmed Sékou Touré distributed to people's militias.

BITTERNESS AND POVERTY

The biggest enemy of conservation efforts in both Senegal and Guinea is poverty. How can you tell a man whose children are hungry that he must not kill the antelope or guinea fowl he comes across?

When the Niokolo park was created, five villages inside its boundaries were moved fifty kilometres away. The villagers are still bitter about this. In the park, the soil was richer, the yield from orchards was at its peak and hunting flourished. They had to leave their ancestral cemeteries behind them. The mausoleum of the Badi village shrine is now in ruins and is being slowly engulfed by a giant kapok tree.

Abdourahmane Samoura, head of a United States-funded natural resources management project, is aware of the problem. "We now have to make up for past mistakes," he says. But how? "We can't bring the villagers back," says Lieutenant Ndiaye. "If we did, in less than two years there wouldn't be a single animal left in the park."

MICRO-PROJECTS AND DEVELOPMENT

A considerable effort is being made in both Senegal and Guinea to develop micro-projects in villages on the edge of the parks in a bid to compensate for the frustration of the inhabitants. This includes raising guinea-fowl, fish farming, beekeeping, market gardening, seed production and the setting up of nurseries. Ousmane and Mariam are two young agronomists responsible for convincing the villagers, whose language they speak, of the need for these projects. They are not trying to impose ready-made solutions but listen instead to what people want and then try to find a way of delivering it.

Beekeeping creates jobs. Carpenters are needed to build the hives, blacksmiths to produce smokers, tailors to make special clothing. The honey can also save the palmyra if mead, a drink made of honey and water, can replace the popular alcoholic drink made from the sap of these 20-metre-tall palm trees. The sap is extracted from the leaves, and the ▶

A ferry on the Gambia river, in Niokolo-Koba National Park.

© France Bequette, Paris

drained tree, which takes 20 years to grow to its full height and can live as long as 70 years, quickly dies. Everything about this palm tree species is useful—its wood is good for timber, its leaves for roofs and its stalks for fences and furniture. Its fruit can be eaten raw or grilled. All these uses are a threat to its survival. Even though heavy fines and even prison sentences can be imposed for cutting down the trees, felling continues.

The central area of the Samba Dia biosphere consists of a protected palm forest which has fortunately been saved from the woodcutters. No poachers are found there either "because there is no game," says Abdul Diallo, who supervises the forest without the help of a vehicle or even a telephone. He relies on inter-village watch committees who let him know of any illegal felling.

The reserve's buffer zone is by contrast an uncontrolled mix of farming activity. The outer area is in a very poor state. Despite a ban, the villagers let their animals stray there, jeopardizing the growth of 10,000 young palms planted in 1997. This is a serious problem for Diallo who, to pay the reserve's labour force consisting of six workers engaged for a period of six months, last year sold 212,000 saplings and is trying to market seeds all over the country.

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Ousmane (left) and Mariam (right), two agronomists who advise villagers on the development of local projects.

MISSION ALMOST IMPOSSIBLE

On the border with Gambia is the Sine-Saloum Delta biosphere reserve, centred on two rivers which split up into countless waterways fringed by mangroves. The 180,000-hectare reserve includes the dry forest of Fathala, which has splendid trees but little animal life. Its manager, Major Jacques Rigoulot, who was already in charge of the area before the Senegalese army took it over as a training ground, has been recalled to carry out an almost impossible mission. His task is to rebuild the burned-down camp, close the twenty sawmills-cum-woodwork factories in the area and set up partnerships with the villages on the edge of the reserve.

The taxes levied on gathering dead wood have earned the villages a million CFA francs ($1,700) in ten months—a lot of money in Senegal—which paid for improvements in water supply, schools and clinics. But Rigoulot is bitter. There is no longer a drop of drinking water in the reserve since its single well was contaminated by sea water, and he has no money to dig another one. He also badly needs solar panels to provide energy for lighting.

However, the results of working with the local communities have been very positive. In the village of Bakadadji, inside the reserve, Rigoulot helps women to harvest oysters, whose roasted shells make good-quality bricks. Like his opposite number at Samba Dia, Abdul Diallo, he (and the village women) could do with some kind of transport—a boat, for example, since four-fifths of the reserve consists of mangroves, inlets and islands.

On the edge of the reserve, just as at Niokolo, vast areas—sometimes whole islands, which are the homes of birds—have been leased to foreigners. The local population derives no benefit from this, except in the form of payment for guides. Lieutenant Ndiaye says that if the villagers were the only people allowed to hunt, poaching would certainly be reduced. But defending nature is an uphill job that is made even harder by lack of resources. This makes the determination of Boucar Ndiaye, Abdul Diallo and Jacques Rigoulot all the more impressive. ■

WHAT ARE BIOSPHERE RESERVES?

Biosphere reserves are geographic areas considered typical of the balanced relationship between people and nature. As of April 1997, 337 Reserves in 85 countries met the criteria for this designation laid down within UNESCO's "Man and the Biosphere" (MAB) Programme. They combine three functions:

- **safeguarding samples of the earth's landscapes, plant and animal species and ecosystems;**
- **fostering economic development that is ecologically and culturally sustainable;**
- **providing support for research, monitoring, training and education relating to local, regional and global conservation issues.**

The reserves form a world network within which information, experience and personnel are exchanged. They contribute to meeting the objectives of the Convention on Biological Diversity and the Agenda 21 Programme that resulted from the 1992 United Nations Conference on Environment and Development held in Rio de Janeiro.

HOW ARE THEY ORGANIZED?

A core area needs to be legally established and ensure long-term protection for the landscape, ecosystem and species it contains.

The limits of a buffer zone around the core must be clearly demarcated. Human activities in this area should not run counter to the conservation objectives of the core area. This may be an area for experimental research into appropriate methods of managing the ecosystem.

A transition area, or area of co-operation, extends outwards from the reserve. It is here that local communities and other stakeholders must agree to work together to manage and develop the area's resources on a sustainable basis. ■

For fuller details, see "The world network of biosphere reserves" in the May 1997 issue of the *UNESCO Courier, Landscape with Figures* (pp. 36-37).

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EL VIEJO THE TORNADO-MAKER

After studying 35,000 tornadoes that have hit the United States since 1950, two researchers have discovered a direct link between tornadoes and a cold Pacific current known as El Viejo or La Niña, the opposite of the better-known warm El Niño. When the waters off Peru cool by only 1^0 Fahrenheit ($^5/_9$ of a degree Celsius) compared with their average temperature, El Viejo sets in motion a jet stream pattern that carries moist air from the Gulf of Mexico to the Ohio Valley, where it clashes with cold air from Canada and triggers off tornadoes.

According to the two researchers, the probability of having four or more springtime tornadoes in the area ranging from Michigan to Alabama increases by 300 to 500 per cent when El Viejo is active in the Pacific in the previous winter. They also discovered that when El Niño warms the waters of the Pacific off South America, there is a significant reduction in tornado activity in the states of Texas, Louisiana, Oklahoma, Kansas and Arkansas—known as "tornado alley".

AMPHIBIAN SOS

Frogs, toads and salamanders are vanishing from all parts of the globe. Not only are these very common amphibians victims of the drying-out of wetlands and the introduction of alien predators, they are also on the decline in protected areas. What is more, growing numbers of congenital malformations are found in all three groups. Researchers suspect factors such as acid rain, ultraviolet-B radiation, which now penetrates the depleted ozone layer more easily, and pesticides. More than 500 teams of scientists all over the world are working flat out to understand what the frogs are trying to tell us, before it is too late.

HOT TIP

When public services in Dhaka (Bangladesh) could no longer provide satisfactory waste collection facilities, two volunteers from the Kalagaban district, where the problem was particularly acute, began offering a parallel service in return for a small financial contribution from the households served. Rickshaw van-drivers sort the waste for bones, polythene bags, paper, plastics and metals, then sell what they collect to relevant industries, thereby adding a little extra to their monthly pay-packets. Women are prominent in the system's smooth running and usually deposit the waste directly into the collection vans.

THE ENVIRONMENT ON CD-ROM

A French ecology association has produced a CD-Rom for all those interested in environmental issues. It contains 3,000 pages of information summarizing thousands of books, as well as 2,500 Web sites that are indexed according to key words (80% of them in English).

Contact:
A. D. M. E., 89 rue Pouchet, 75017 Paris, France. Fax: (33)(0)1 42 63 34 62. E-mail: info@adme.asso.fr. Web site: http://www.adme.asso.fr

RENT-A-RUG

An American carpet manufacturer offers his customers the chance of leasing a carpet by the month. The company assists in choosing the carpet, laying it, maintaining it and finally removing it for recycling. Ground up into a powder, old carpets are used as a backing for making new ones. For manufacturers, the system has the advantage of saving non-renewable resources and making their products last, thereby limiting waste and pollution.

OLD BATTERIES DON'T JUST FADE AWAY

In Gambia, discarded worn-out batteries are extremely dangerous, especially to children. In order to counter this danger, the authorities in Banjul, the capital, have placed metal containers at strategic points for use by the general public. This initiative was suggested by a woman living in the suburb of Kololi, who asked schoolchildren to bring her batteries in return for a small sum of money. She stored the batteries at her home until a suitable dump could be set up.

CORRUGATED SHEETING

A factory near Cotonou (Benin) will soon be producing plant-derived polyol in order to make corrugated sheeting. Polyol is usually a derivative of oil and goes into the production of a common plastic, polyurethane. In this case the oil will be replaced by locally-produced palm, cotton and shea oils. Since all corrugated sheeting is at present imported, this new product should prove beneficial to Benin's economy. Unfortunately, although it is more durable, it will cost twice as much as ordinary corrugated metal sheeting.

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music from

South African traditional popular music has taken the international music scene by storm

These days South African music is known all over the world. It emerged on the international scene at the end of the 1960s with Myriam Makeba and Hugh Masakela and really took off after apartheid was abolished.

Now we have the wonderful sounds of Joseph Shabalala's a cappella Ladysmith Black Mamhazo group, Mahlathini and the vivacious Mahotella Queens, the lively jazz of Dollar Brand, Chris McGregor, Dudu Pukwana, Jonas Gwangwa and Bheki Mseleku, as well as the dynamic multiracial group Juluka, led by Johnny Clegg and Sipho Mchunu.

Influenced by gospel and soul music, the ancient indigenous choral traditions—especially among the Zulu and the Xhosa—developed rich vocal harmonies which are the basis of the country's modern popular music.

The black townships—artificial ghettos swollen by migrants from the countryside who were forcibly resettled under apartheid—are especially fertile ground for musicians. Soweto, for example, is one of the most lively musical centres in the country, where the *mbaqanga*, a combination of South African rhythms, jazz, soul and old European tunes, with a throbbing bass sound, is still very popular.

The Africa Cultural Centre

Last summer, the Musiques de Nuit festival in France invited nineteen young musicians, dancers and artists from Johannesburg's Africa Cultural Centre to come and run workshops for teenagers in various suburbs of Bordeaux. They also organized discussion groups on philosophical and humanistic subjects.

The Centre, a lively cultural spot and symbol of liberated Africa, was founded in the 1980s in the west Johannesburg suburb of Newton Bay by Benjy Francis, a man of the theatre who was born in a Durban township in the year apartheid was officially introduced. Since the end of the 1970s, he has been the standard-bearer of rebellious black culture, along with others like the producer Barney Simon. After the Soweto massacre of 1976, Francis decided "to give the struggle another dimension with new cultural projects."

With limited resources, he founded the Market Theatre, which started out in the street before becoming what is now the Centre a few years later. It was shut down several times by the authorities, but survived thanks to the perseverance of Francis and to funding by progressive organizations. Its repertoire was then expanded to include other disciplines and several artists gave their time freely. In 1980, Francis opened an artists' centre to encourage exchanges between various forms of expression, and the Africa Cultural Centre grew out of this initiative. A repertoire of South African plays was put together, notably Duzaka's *Night of the Long Wake*.

The Centre is well known in Johannesburg but also organizes courses and workshops in other towns, teaching music, dance (traditional and hip-hop), percussion, drama and the plastic arts. The aim, says Francis, a colourful figure with a beard and a beret, is "to channel young people's energies towards artistic expression which can free them. We are offering our approach and we are ready to learn as well. We don't close our doors, we don't commercialize and we don't downsize our dreams."

Citing the example of Nelson Mandela, Francis opts for dialogue rather than confrontation, for tolerance and openness rather than revenge and hostility. Two years ago, the Centre staged Africus, the continent's first biennial modern art exhibition, on the theme of "Let's decolonize our Minds".

In 1994, the Centre opened its Children's Museum, which will soon have a scientific section and a library. The Centre has also welcomed performers such as Whitney Houston and organized a children's parade ("Heal Humanity") aimed at encouraging young people's creativity. Francis is likewise planning to launch a social awareness project, to look at problems like battered children, poverty, hunger and teenage pregnancy.

Last autumn, the Cité de la Musique in Paris welcomed some other South African musicians, who also displayed the country's cultural richness and diversity. They included the Nzalabantu Choir, a physically striking group of traditional female singers from Kwazulu Natal who usually perform at initiation rites, marriages and village festivals. There was also the diva Sibongile Khumalo, who comes from the same part of the coun-

South Africa

BY ISABELLE LEYMARIE

© Arthur Bozas, Cité de la Musique, Paris

The Nzalabantu women's choir from Kwazulu Natal (South Africa).

try but grew up in Soweto. Accompanied by a quartet featuring the talented young jazz pianist Moses Mololekwa, she sings from a repertoire which blends the lyrical with traditional Zulu chants. There was also a troupe of *ingoma* dancers (the Lamontville Group) and the Shukuma Black Mambazo All Star Flutes.

Choirs, dances and penny whistles

On Sundays, *ingoma*, a collection of dances that takes its name from a drum, is put on by Zulu miners living in the mine hostels. The songs and dances, which hark back to those of ancestral warriors and are warlike and initiatory, are performed to the accompaniment of a large drum made of a double cowhide stretched over a metal oil drum.

Lamontville, after the name of a Durban township, is a group of young dancers who keep alive the famous gumboot dance beloved of Zulu workers during their leisure time. The dancers wear rubber boots adorned with tinkling bottle caps which they slap with their hands. The rhythm of the steps, the hand-slapping and the shouts and exhortations of the group's leader are the only musical accompaniment.

The Shukuma Black Mambazo All-Star Flutes, which blossomed in the Johannesburg township of Alexandra between 1956 and 1963, came together again specially for the Paris concert. With acoustic guitars and penny whistles, they recreate the sound of the *kwela* groups. *Kwela!* in Zulu means "scram!" and is used to warn that the police are coming. This musical style, popular in the 1940s and 1950s, is a street version of township jazz. It has gathered other instruments along the way, such as the saxophone, electric guitar, bass and piano, and influenced many performers, including Myriam Makeba. ■

The gold and silver age of BANSKÁ ŠTIAVNICA

by Edouard Bailby

The old town of Banská Štiavnica, in the heart of the Carpathian mountains, was once a nucleus of the European mining industry. Its remarkable architectural and technological monuments earned it a place on the World Heritage List in 1993.

Why visit an old mining town? I imagined houses lined up in rows like matchboxes, a handful of dull office buildings, a soulless school, an unexceptional church and a few scrawny dogs. Emile Zola came to mind. What was the point? Slovakia, a mountainous country covering 49,000 square kilometres in the heart of Central Europe, has more than 150 medieval fortresses, Romanesque chapels and Gothic cathedrals, Renaissance palaces and Baroque residences; I was much more interested in these. Yet when I finally made up my mind to head down a road winding through forests and between emerald-green lakes, I was completely taken aback when I suddenly beheld a little architectural jewel cradled in the hills. This was the once-flourishing town of Banská Štiavnica.

Legend has it that a goatherd guarding his flock one day saw a lizard covered in flakes of gold and immediately spread the news of this extraordinary sight. At that time the local people lacked the technical skills and resources necessary for extracting the gold and silver buried deep in the mountain, and the mines, some of which were on the surface, were probably first worked by the Celts a century or two before the modern era. The Celts even minted coins known as *biatecs*, weighing 16 grams each. A large number of these have been found at some fifteen sites, especially in the country's western regions. The Slavs, who arrived in the region later, continued extracting the precious metals and traded in them.

A twelfth-century document shows that the Banská Štiavnica region, in Slovakia's heartland, was known as the "land of miners". After having settled in the Carpathian Mountains for over a century, the Hungarians incorporated Banská Štiavnica into their kingdom, which eventually extended to the shores of the Adriatic. They were quick to grasp the benefits they could reap from mining the rich veins of gold, silver and copper that stretched for kilometre after kilometre.

In order to work the mines intensively, they brought in German settlers, whose expertise in the field was famed throughout Europe. To make sure they stayed, King Bela IV allowed them a series of privileges, especially the freedom to trade, which he set out in 1238 in a special charter granted to Banská. A few years later, when the area was devastated by the Mongols, the German and Slovak inhabitants were given permission to build fortifications to protect themselves from future attack. Mindful of their

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Banská Štiavnica is Slovakia's oldest mining town.

own interests, the Hungarian rulers built a fortified enclave for themselves in the upper part of the town, the remains of which are still visible today. It was here that they collected taxes and received their due share of the proceeds from mining.

PIONEERING TECHNOLOGY

By the Middle Ages Banská Štiavnica was producing 20 per cent of the silver circulating on the world market, as well as large quantities of gold for export to various parts of Europe, especially Germany and Flanders. Two cities further north, Gremnica and Banská Bystrica, also rich in precious metals, flourished at the same time. Growing ever richer, the German colonists and the Hungarian nobility began building Catholic and Protestant churches and stately palaces and mansions that were the glory of the kingdom.

After the Battle of Mohacs in 1526 in which the Magyar army was defeated, the Turks occupied Buda and began making armed forays into the interior of Slovakia, then known as Upper Hungary. Even so, they were never able to lay their hands on the gold and silver mines. With support from the forces of Count Nicholas Pallfy, the inhabitants of Banská Štiavnica succeeded in repelling the foreign invaders in 1593 only a few kilometres from the town.

In 1627, explosives were used (for the first time for such a purpose in Europe) to extract ore from the mountain. In the seventeenth century two local engineers perfected a mechanical pumping system which improved the silver extraction process by creating some sixty artificial lakes to drain off the water that was forever threatening to flood the mines. About twenty of them still exist, and the Slovaks bathe in them during the summer months. In the eighteenth century Banská Štiavnica became the European centre of mining technology and expertise. In 1762, Maria Theresa, Empress of Austria and Queen of Hungary, founded a Mining Academy there. The first of its kind in the world, it attracted celebrated teachers from all over Europe. One of the founders of modern chemistry, Antoine Laurent de Lavoisier, gave it his support. The Academy's reputation was such that it served as a model for the *Ecole Polytechnique* in Paris.

However, by the end of the nineteenth century the mines were no longer profitable. Today there are a mere 10,600 people living in Banská Štiavnica, and only a few of the region's slender gold and silver veins are still mined. Despite wars, ▶

earthquakes and fires, the town's prestigious past largely survives in the monuments and buildings that were erected over the centuries. These form an architectural complex that is a blend of the Romanesque, Gothic, Renaissance, Baroque and Neo-classical. Every community—Slovak, German and Hungarian—has added its contribution, making Banská Štiavnica a unique site and warranting its inclusion on UNESCO's World Heritage List in December 1993.

This blend is perhaps one of the reasons why it is not easy for people to find their way around the town's steep, winding maze of streets. The only easily identifiable landmark is Trinity Square (Namestie sv. Trojice) in the heart of the city. Boasting a quadruple eighteenth-century Baroque colonnade sculpted by Italian artist Dionyz Stanetti, it was built in memory of the plague victims of 1710 and 1711. Similar colonnades, of varying degrees of quality, exist in several other Slovak cities.

Gothic or Renaissance style houses stand on either side of the triangular square that slopes steeply down to the old town hall. At number 12 a modern art gallery bears the name of the painter Jozef Kollár (1899-1982), who was born and died in Banská Štiavnica. His works are impressionistic in style, and apart from his portraits he is best known for his *Z Povazia* ("Along the River Vah") and *Zimmy trh v Banskeuj Stiavnici* ("The Winter Market in Banská Štiavnica").

The Baroque calvary complex on Scharfenberg Hill, one of many hills around Banská Štiavnica enjoying protected status.

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IN SEARCH OF THE PAST

Two medieval churches 500 metres apart symbolize the existence side by side of the town's two communities. One is St. Catherine's Church (Kostol sv Kataríny), also known as the Slovakian church because mass was celebrated there in the Slovak language from the seventeenth century onwards. The other is the Church of the Blackfriars, once known as the German Church. Neo-gothic in style since its reconstruction at the end of the nineteenth century, St. Catherine's houses a polychrome wooden sculpture of the Madonna dating from 1506. The mortal remains of wealthy Banská Štiavnica notables and burghers lie in the crypt. An ancient Roman basilica with three naves, the Blackfriars church was rebuilt in 1806 and contains a remarkable nineteenth-century organ.

The partly ruined Old Castle (Stary zamok) is visible on the heights above the town centre. It is surrounded by sixteenth-century ramparts and was the enclave of the Hungarian kings. Facing it on another hill is the New Castle (Novy zamok), which was built as part of a complex of fortifications

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The town hall (16th-18th centuries) with St. Catherine's church in foreground.

by the inhabitants of Banská Štiavnica from 1564 to 1571 to protect them from the Turks. It is now the most interesting of the town's historic buildings. The whitewashed structure, endowed with four bastions, is both massive and elegant in appearance. Several of its floors have been fitted out to house a museum devoted to the region's history, especially the struggles against the Ottoman army. It also contains many mementoes from the sixteenth and seventeenth centuries.

Other churches, chapels, stately mansions, abandoned mines and old, narrow paved streets where motor traffic is prohibited confer a somewhat unreal feeling on the centuries-old mining town. Yet three thousand students a year attend its School of Mining and Industry, which is located in a park overlooking Trinity Square and is one of the best in Central Europe. Between classes the students can be seen strolling through the nearby alleys lined with houses and gardens, as if in search of the past. ■

Vestiges of an industrial past

Banská Štiavnica, Slovakia's oldest mining town, lies on the steep slopes of the Glanzenberg in the Paradajz Mountains.

Its ores have been worked since the Bronze Age (10th-8th centuries B.C.) and mining only ceased at the end of the 19th century.

The city and the technical plant in the surrounding area illustrate a remarkable symbiosis between the urban environment and the natural habitat.

■ *State-of-the-art technology*

In the 17th century Banská Štiavnica saw a large number of technological advances. Gunpowder was used in the mines for the first time. In the field of hydraulic energy, a system of dams and weirs was built in the 18th century to wash the ore. This system was adopted all over the world and remained the most advanced of its kind right into the 19th century.

■ *Reservoirs and dams*

About 20 reservoirs have survived, the oldest of which, Velkà Vodárenskà, was built in 1510. Three others date from the 16th century and two more from the 17th century. Most of them were built in the 18th century, a period of intense mining activity in the town.

There is also a series of dams—the longest of which is nearly 775 metres long—and water-collecting channels.

■ *Factories and mines*

Two remarkable drainage galleries still exist: the Beiber, begun in the 14th century, is the oldest known example of its kind. The Voznicka gallery, which is over a kilometre long, was the world's longest when it was inaugurated in 1878.

There are also several surface ore deposits. The mine building and the Mayer machine room (begun in 1805) are still standing.

Also still standing is a silver and lead smelting plant which dates from the first half of the 17th century and was modernized in 1872. It was one of the buildings belonging to the world's first factory producing machine-made metal cable (1837). Last but not least, the mine museum houses a number of items of equipment from the region.

Abbas Kiarostami

'Between dreams and reality'

© Gamma, Paris

The work of Iranian film director Abbas Kiarostami won an international accolade in 1997 when his latest film, *The Taste of Cherry*, was awarded the Golden Palm at the Cannes Film Festival. Two years before, the Locarno Festival had organized a retrospective of all his work, which is notable for its imaginative range and humanity. In this interview with Romain Maitra, Abbas Kiarostami looks back over his career and describes his approach to film-making.

■ **How did you get into films?**

Abbas Kiarostami: My roots were in graphic art; I branched out into cinema quite by chance. Graphic art is a kind of minimalist art in which one has to communicate an idea in a precise and agreeable form using great economy of means. I learned to live with the constraints of graphic art, and this helped me to accept constraints in general and use them in my films. My son wants to be a film-maker but I have advised him to learn graphics first.

While I was a graphic artist, I started making advertising films as well. In advertising films, you have only thirty seconds or a minute to get a message across. You have to know your target audience very well: you have to know how people act and react: you have to know all about marketing. When you have to condense a message into one short minute, you learn what a minute really is. Making advertising films gave me an opportunity to learn all about film-making before getting into real cinema. Today I do everything in my films: I write the script, visualize the scenes with sketches, direct, supervise the sound and its mixing, choose the music and take care of the montage.

■ **What are the possibilities of cinema?**

A. K.: To my mind cinema offers greater possibilities for self-expression than any other art. Absolutely anything can be depicted iu cinema and this is not really possible in the other arts. In a film you can use silence or darkness, for instance, to great effect. At the end of my latest film, *The Taste of Cherry*, the central character, Mr. Badii, goes down into a pit and lies down. The moon disappears behind clouds and everything fades into darkness. For a whole minute nothing is shown on the screen. Life, cinema and light become one. With its magical power, cinema is a remarkable instrument for stimulating wonder and casting doubt on the most deeply rooted ideas.

■ **Are there any images or ideas you are not allowed to show when you make films in Iran?**

A.K.: The kind of violent scenes that appear in movies all over the world are prohibited in the Iranian cinema, where it is also virtually impossible to make any reference to sexuality. Wherever in the world my films are set, I can never make any allusion to sex in them.

In Iran, you cannot hold your wife's hand in the street. In a movie, if a woman falls down in the street, she can only be helped up by another woman because touching is involved. And so if you see a woman tumble in an Iranian film don't be shocked if a man happens to be standing nearby but does nothing to help. It's not that he's unwilling to lift the woman back onto her feet but that he is not supposed to do so. Don't be shocked if you see a woman drowning in a swimming pool or a lake and a man is standing around doing nothing. He's not allowed to do anything. In real life maybe he would step in, but not in a movie. It's not that Iranian people are cold-blooded—it's just a limitation imposed on Iranian cinema. Don't be surprised if you see in an Iranian film a woman wake up in bed wearing her *chador*. In real life this is absurd, but in the cinema women have to wear a *chador* all the time. It is forbidden to show dancing and drinking alcohol—but not smoking—in the cinema.

To receive an exhibition permit in the 1980s, all films had to go through a four-stage process involving approval of the synopsis, script, cast and crew, and the final film. The situation has not changed much since then. Although political and social crit-

icism is not unknown in films, care is taken not to displease the clerical establishment. Ironically, however, prohibitions of this kind have helped the Iranian cinema to achieve success internationally because it has always had to face the challenge of not showing certain things or finding inventive ways of expressing them. The pressure has slackened a little since the new government took over recently and one hopes that film-makers will now have more freedom.

■ **Are Iranian films widely distributed outside Iran?**

A.K.: I think Iranian cinema today is well placed internationally. Few countries from my part of the world make films that have the kind of worldwide distribution that ours have, not to speak of appreciation from international critics. Only recently Iranian film-makers have won four prizes at international film festivals. My *The Taste of Cherry* won the Golden Palm award at the Cannes Film Festival, Jaffar Panahi's "Mirror" won the Golden Leopard at the Locarno Festival, and at the Montreal Festival Majid Majidi won first prize for direction, as well as four other awards, for his film "Children of Heaven". Even more recently Parwiz Shahabazi won first prize in the young film-maker category for his film "Traveller from the South" at the Tokyo Film Festival. This is something very new for Iran.

Compare our situation with that of China. China was on the verge of the same kind of breakthrough three years ago. But Chinese films were often produced in America and many Chinese film-makers depended on American finance. These films were given an American-style treatment and lost their Chinese flavour: American financing changed the whole structure of Chinese films. Iranian cinema, on the other hand, may lack technical rigour, finance to mount expensive productions, and access to networks but it has one invaluable advantage—ideas. Besides, the fact that American films are not distributed in Iran is a blessing in disguise because it means that our film industry has been protected from stiff competition. What's more, the commercial success of high-quality Iranian films has led banks to offer long-term loans for film production, thus placing the industry on a more secular basis.

■ **The main character in *The Taste of Cherry* decides to take his life. How did you come to make a film about suicide?**

A.K.: There were a number of reasons. Firstly, statistics show that very few suicide attempts are successful; in other words the desire to live is a lot more powerful than the desire to die. Secondly, all religions strongly disapprove of suicide and what is forbidden naturally attracts curiosity and is worth looking at closely. We should be free to ask the question: "Must I continue to live or not?"

Life is a choice and not a sentence, but often we do not realize this. When we accept life as a bundle of constraints we are actually making a choice. I want to tell people: if you choose to live, then do it well. So many people are standing by the exit door: they neither take part in life wholeheartedly nor leave it. They live in the shadow of death.

We often do not realize that life is a choice and not a sentence. When we accept life as a bundle of constraints we are actually making a choice. I want to tell people: if you choose to live, then do it well.

AN ABBAS KIAROSTAMI FILMOGRAPHY

Feature-length films:
Mossafer (The Passenger, 1974)
Gozaresh (The Report, 1977)
Avaliha (First Graders, 1985)
Khaneh-ye dust kojast? (Where is My Friend's Home?, 1987)
Mashqh-e shab (Homework, 1989)
Namay-e nazdik (Close Up, 1990)
Zendegi edameh darad (And Life Goes On, 1992)
Zir-e derakhtan-e zeytoun (Through the Olive Trees, 1994)
Tam-e guilass (The Taste of Cherry, 1997)

Short and medium-length films:
Nan va kucheh (Bread and Alley, 1970)
Zang-e tafrih (Recess, 1972)
Tajrobeh (Experience, 1973)
Do rah-e hal baray-e yek masaleh (Two Solutions for One Problem, 1975)
Manam mitunam (I can too!, 1975)
Rang-ha (Colours, 1976)
Lebasi baray-e arusi (A Suit for a Wedding, 1976)
Rah-e hal-e yek (Solution No 1, 1978)
Qazih-e shekl-e aval, qazih-e shekl-e dovom (The Case: Solution No 1, Solution No 2, 1979)
Behdasht-e dandan (Dental Hygiene, 1980)
Be tartib ya bedun-e tartib (In an Orderly Fashion or Without It, 1981)
Hamsorayan (The Chorus, 1982)
Hamshahri (The Citizen, 1983)

Further reading:
An interview with Abbas Kiarostami was published in the July-August 1995 issue of the *Unesco Courier*, "A Century of Cinema".
Abbas Kiarostami, published by Editions de l'Etoile, Paris, 1997 ("Petite Bibliothèque des Cahiers du Cinéma" series).

■ **Is life a choice or a sentence?**

A.K.: Actually the film has more to do with life and death than with suicide and that is not a new subject for me. Three of my films—*Where is My Friend's Home?* (1987), *And Life Goes On* (1992) and *Through the Olive Trees* (1994)—are shown as a trilogy because they were shot in the same location. But if you replace *Where is My Friend's Home?* with *The Taste of Cherry*, it makes another trilogy whose theme is the fight for life and awareness of death, appreciating life and accepting responsibility for it while knowing that the exit door is just round the corner. The Romanian writer E. M. Cioran once said, "Without the possibility of suicide, I would have committed suicide quite a few years ago."

■ **Did you have problems dealing with this issue?**

A.K.: It is true that in Iran suicide is forbidden by Qur'anic law. Catholics too are strongly opposed to suicide. But there are also other people in the world who are not religious, and besides, religious laws and those who uphold them may not always have respect for our lives. In Iran we have a religion with two parallel streams: one is devoid of the spirit of enquiry and flows backwards; the other is more developed and accepts enquiring minds.

■ **In your work the plot of one film often blends imperceptibly into that of another....**

A.K.: Yes. This is particularly true of my latest trilogy in which each film emerges from the previous one much like a Russian doll. My films never tell a story which begins at one point and ends at another. A new story always begins somewhere along the way. And the stories are blended together to such an extent that it's impossible to separate them. In fact they are all part of a single story. Another thing: I think it's important that film-makers should leave their films somewhat incomplete so that spectators can complete them using their own imagination.

■ **Nature is a constant presence in your films.**

A.K.: Yes. We are separated from nature but we are part of it. Industrialization and progress have not really come to our rescue. To rediscover ourselves, we must go back to nature. In *The Taste of Cherry*, I tried to show the gradual encroachment of the industrial landscape and people's relation to it. Nature has been modified and destroyed by human ▶

hand and is being eaten up by expanding cities. The old taxidermist in the museum says to Mr. Badii: "Are you in despair? Have you never looked at the moon? Don't you want to see the stars? And the nights of the full moon? Don't you want to hear the whisper of the rain, the song of the nightingale? You want to close your eyes? My dear fellow, you should see all these things! Those who live in the other world want to come over here to see, and you want to hurry to go there?"

■ **What do you think of the violence that pervades cinema today?**

A.K.: Violence, like kindness, is a part of human beings, and as long as it exists it is probably necessary to show it. But there is a difference between violence as it exists and violence as it is expressed in films. I think violence tends to be artificially treated in the cinema. The kind of violence that prevails in real life is cold, grey violence but it is shown in cinema in red-hot blood and guts form. We have seen so much of this fake violence that its so-called magic does not work any more. But the merchants of violence go on making fortunes out of conjuring up a phantasm of this impulse that is inside everybody and rooted in society. For twenty years most mainstream cinema has not shown violence as it really is.

Violence was not treated like this in the past. In Fritz Lang's *The Big Heat* (1953), for example, it is completely internalized so that enormous tension is built up. The French director Claude Sautet's *Classe Tous Risques* (1960) also explored the psychology of violence with great skill and emotional realism. But what we see now is professional violence-mongering for its own sake. The irony is that nobody likes violence but everybody goes to see it.

■ **How do you feel about winning the Golden Palm at the 1997 Cannes Festival and UNESCO's Federico Fellini Gold Medal later in the year? Will these awards help your career?**

A.K.: They certainly will. I am very proud and happy that such prizes have been awarded to my kind of cinema. The fact that such valuable awards are coming my way is very important because they encourage film-makers to carry on producing "different cinema", cinema with a personal touch. They will attract audiences to come and see this kind of cinema and give it greater prestige. Good cinema cannot exist without an audience.

■ **Who are your favourite film-makers?**

A.K.: I like cinema which has roots in reality and yet also explores dreams. There are many film-makers I like, but if I had to name one it would be Yasujiro Ozu of Japan.

■ **How should the cause of non-commercial cinema be defended today?**

A.K.: Much commercial cinema is churned out in response to market forces. But this process contains the seeds of its own destruction because there is a limit to what people can take. The gap between this kind of cinema and the reality of normal life has become so great that people do not recognize themselves any more in this kind of film.

There is not much to be done to counter this trend; it is going to self-destruct. I certainly hope that a different kind of cinema will come into its own and that real cinema will put a stop to fake cinema. To help this to come about, it is crucial that this new cinema should be given critical recognition. ■

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THE UNESCO COURIER

will be taking part in the 8th Exhibition of Magazines, Journals and Reviews, which will be held at the Parc des Expositions, Porte de Versailles, Paris from 20 to 25 March 1998.

A wide range of magazines and reviews published in France will be on display at the exhibition, where a special area will be set aside for the public to use an Internet site to obtain information and discover magazines published in other countries. Held jointly with the Multimedia and Electronic Publishing Fair, the Book Trade and Industries Fair and the 18th Paris Book Fair, the Exhibition of Magazines, Journals and Reviews forms part of a major annual event in the Paris calendar which brings together writers, publishers and readers.

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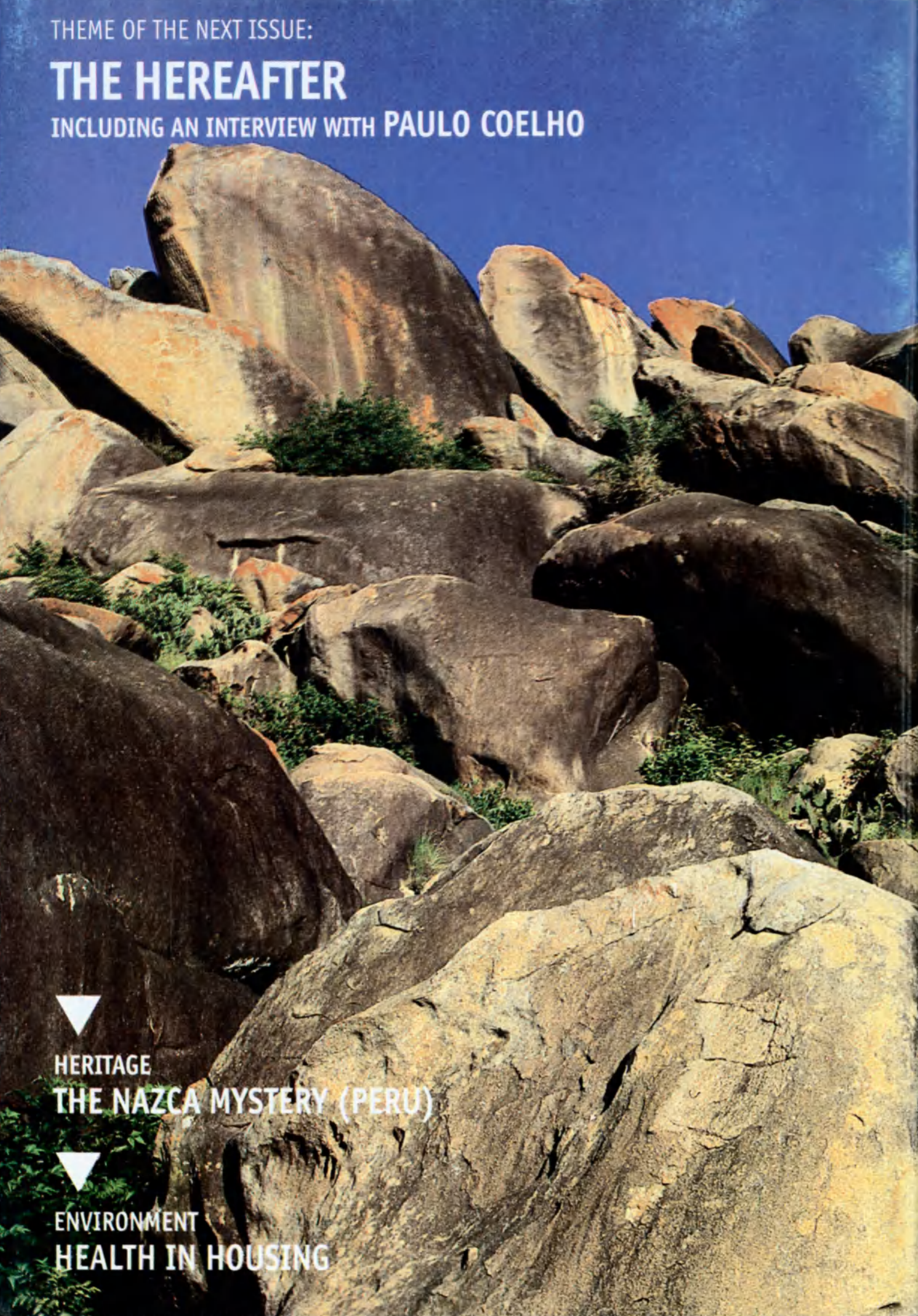
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